

United States
1079
Circuit Court of Appeals
For the Ninth Circuit.

Transcript of Record.
(IN THREE VOLUMES.)

UNION TOOL COMPANY,

Appellant,

vs.

ELIHU C. WILSON,

Appellee.

VOLUME I.
(Pages 1 to 416, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

Filed

JAN 30 1917

F. D. Monckton,
Clerk.

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INDEX TO THE PRINTED TRANSCRIPT OF RECORD.

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

	Page
Amended Bill of Complaint	39
Amended Praecipe for Transcript of Record...	1106
Answer	10
Answer to Second Bill of Complaint	52
Assignments of Error	1115
Attorneys, Names and Addresses of	1
Bill of Complaint	2
Bond on Appeal	1120
Certificate of Clerk U. S. District Court to Transcript of Record	1107
Citation	1113
DEPOSITIONS ON BEHALF OF COM- PLAINANT:	
BAILEY, W. H.....	439
HUBBARD, JAMES C.	409
Cross-examination	417
Redirect Examination	420
Recross-examination	425
Recalled	933
Cross-examination	938
MILLS, EDWARD L. (In Rebuttal)....	964
Cross-examination	971

Index.

Page

EXHIBITS—Continued:

Complainant's Exhibit Wilson Patent— Letters Patent Issued to E. C. Wilson for Underreamer	1070
Complainant's Exhibit Wilson Under- reamer Handbook	1012
Complainant's Exhibit—Wilson Unassem- bled Underreamer—Photograph.....	1010
Defendant's Exhibit Bole Patent—Letters Patent Issued to R. E. Bole for Under- reamer	1129
Defendant's Exhibit Double Patent No. 1— Letters Patent Issued to E. Double for Underreamer	1132
Defendant's Exhibit Double Patent No. 2 Letters Patent Issued to E. Double for Underreamer	982
Defendant's Exhibit Double Patent No. 3— Letters Patent Issued to E. Double for Underreamer	988
Defendant's Exhibit—File Wrapper and Contents In Re Application of Fred- erick William Jones	1075
Defendant's Exhibit O'Donnell and Wil- lard Patent—Letters Patent Issued to T. A. O'Donnell and A. G. Willard for Underreamer and Drill	1004
Defendant's Exhibit Swan Patent—Letters Patent Issued to J. C. Swan for Under- reamer	998
Interlocutory Decree	85

Index.	Page
Memorandum of Decision	65
Memorandum of Ruling on Rehearing	81
Motion for Leave to Amend Bill of Complaint and to Consolidate	37
Motion for Order Consolidating Causes and No- tice Thereof	26
Motion to Consolidate	36
Motion to Strike Out Counterclaim Set Up in Answer of Defendant	22
Names and Addresses of Attorneys.....	1
Notice of Motion to Strike Out Counterclaim of Defendant	21
Opinion on Rehearing	81
Opinion on the Merits	65
Order Allowing Appeal and Fixing Amount of Bond	1119
Order Consolidating Causes	60
Order Denying Motion to Dismiss Amended Bill of Complaint, etc.	51
Order Extending Time to File Record and Docket Cause to February 1, 1917.....	1127
Order Extending Time to January 3, 1917, to File Record and Docket Cause.....	1126
Order Granting Motion for Leave to Amend Bill of Complaint, etc.	48
Order Granting Motion to Consolidate Causes, etc.	49
Order Granting Rehearing	80
Order That Counterclaim Set Up in Answer of Defendant be Stricken Without Prejudice.	25
Petition for Appeal	1114

Index.	Page
Praecipe for Transcript	1104
Proceedings Had Tuesday, March 27, 1914.....	93
Proceedings Had December 11, 1914.....	377
Proceedings Had February 16, 1915.....	520
Proceedings Had July 23, 1915.....	541
Second Bill of Complaint.....	28
Stipulation	62
Stipulation	1102
Stipulation Re Defendant's Exhibit Bole Patent and Defendant's Double Patent No. 1, etc...	1128

Names and Addresses of Attorneys.

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For Appellee:

RAYMOND I. BLAKESLEE, Esq., California
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*In the District Court of the United States, in and
for the Southern District of California, South-
ern Division.*

No. A-4 and B-62—EQ., CONSOLIDATED.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Bill of Complaint.**FOR INFRINGEMENT OF LETTERS PATENT.**

To the Honorable, the Judges of the District Court of the United States, in and for the Ninth Circuit, Southern District of California, Southern Division:

Elihu C. Wilson, a citizen of the State of California, and resident of Los Angeles, county of Los Angeles, California, brings this Bill of Complaint against Union Tool Company, a corporation organized and existing under and by virtue of the laws of the State of California, and having its principal place of business in the city of Los Angeles, in said State of California, in said Southern District of California, Southern Division thereof; and thereupon, your orator complaining, shows unto your Honors:

I.

That heretofore and prior to the 28th day of November, 1905, your orator, Elihu C. Wilson, was the original, first and sole inventor of a certain new and useful underreamer, not known or used by others, before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two (2) years prior to his application for letters patent thereon in the United States of America, and not in public use or on sale in the United States of America for more than two (2) years prior to said application for letters patent therefor, and not aban-

doned, and not patented [1*] in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of said application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assigns, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully

*Page-number appearing at foot of page of original certified Transcript of Record.

appear from said original letters patent or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions. [2]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practiced by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon said defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said let-

ters patent No. 827,595, and in the exclusive rights of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [3]

V.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendadnt herein, Union Tool Company, as aforesaid, has, within the county of Los Angeles and State of California, and within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that

the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and threatens and intends to continue so to do, and will continue so to do unless restrained by this Court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage.

VI.

That for all the wrongs herein complained of, your [4] orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendant may, if it can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays

that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with costs of suit.

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights, and that the defendant be restrained from any further violation of said rights.

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees, and each and every of them, from any further construction use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering the decree above prayed, may assess, or cause to be assessed in addition to the profits to be accounted for as aforesaid, the damages your orator has [5] sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the wilful and unjust infringe-

ment by said defendant as herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may seem proper and meet and in accordance with the equity of the case and with good conscience.

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your orators may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant. 728-29-30
California Bldg., Los Angeles, Cal. [6]

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 14th day of Feb., 1913, before me personally appeared Elihu C. Wilson, who being duly sworn

did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint, that he has read the Bill and knows the contents thereof, and that the same is true of his knowledge and belief, except insofar as matters are therein stated on information and belief, and as to those matters, he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 14th day of February, 1913.

[Seal]

G. ROY PENDELL,

Notary Public in and for County of Los Angeles,
State of California.

My Commission expires 1916.

[Endorsed] : No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson vs. Union Tool Company. In Equity. For Infringement of Letters Patent. Bill of Complaint. Filed Feb. 14, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Raymond Ives Blakeslee, Solicitor and Counsel for Complainant, 728-29-30 California Bldg., Los Angeles, Cal. [7]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Answer.

Answering the Bill of Complaint of the complainant:

Defendant denies that at any time prior or subsequent to or on November 28th, 1905, complainant was the original, first or sole inventor of the alleged or any new or useful underreamer; denies that the same was not known or used by others before complainant's alleged or supposed invention or discovery thereof, or that the same had not been patented or described in any printed publication in the United States of America or any foreign country prior to complainant's alleged or supposed invention or discovery thereof or more than two years prior to complainant's alleged application for letters patent thereon in the United States of America; denies that the same had not been in public use or on sale in the United States of America for more than two years prior to complainant's alleged application for letters patent therefor; defendant does not know and is not informed save by said Bill of Complaint as to whether complainant on November 28, 1905, or on or at any date or time, made application in due form of law or otherwise or at all, in accordance with the then existing laws, or otherwise or at all, for letters patent of the United States upon or for said alleged or pretended invention and therefore denies the same and prays that complainant be required to [8] make strict proof thereof; admits that on July 31, 1906, pretended letters patent numbered 827,595 were attempted to be granted or issued to complain-

ant, but specifically alleges that said pretended letters patent were and are wholly void and of no effect; denies that such pretended letters patent were issued or granted according to or in due form of law or that thereby the alleged or any rights were granted or secured to complainant; denies that the pretended invention alleged to be set forth, described or claimed in or by said pretended letters patent is of great or any value whatever or that the complainant has upon each and every underreamer manufactured, used or sold by complainant, marked thereon the word "patented" together with the day and date of said pretended letters patent; admits that on or about February 3, 1913, defendant received a notice that complainant claimed this defendant was infringing upon said pretended letters patent but denies that defendant ever had any notice of any such claim prior thereto; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said pretended letters patent or in the alleged and pretended exclusive rights of complainant therein or thereunder; denies that the said alleged exclusive rights are, or except for the act or acts of this defendant would be, of great or incalculable or any value whatever to complainant.

Defendant denies that at any time whatever, either in the Southern District of California or elsewhere, it has ever made or used or leased or sold any underreamer or underreamers containing or embracing said alleged or pretended invention so alleged to be set forth, described, claimed or patented in or by said pretended letters patent No. 827,595, or has in any

manner whatsoever infringed upon the alleged exclusive rights or right of complainant by virtue of said pretended letters patent [9] or that defendant has ever threatened or proposed or intended so to do; denies that defendant has ever realized any gain, profit or advantage whatever from the use in any manner whatsoever of said pretended invention or that by reason of any act or deed of defendant in the premises, complainant has suffered or is suffering or will suffer great, irreparable or any injury whatsoever.

Defendant alleges that said letters patent No. 827,595 are void for the reason that the said Wilson unjustly obtained the same for what was in fact previously invented by another, to wit, Alexander Cummings, formerly residing in the city of Los Angeles, California, and now a resident of Baldwin Park, California, who was using reasonable diligence in adapting and perfecting the same.

Defendant further alleges that the alleged and pretended invention in underreamers pretended to be patented in or by said patent No. 827,595, or things in all material and substantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant and more than two years prior to the alleged application of said complainant for said pretended letters patent, been patented and described in printed publications in the United States, and particularly in the following letters patent of the United States:

Number.	Date.	Inventor.	Invention.
734,833,	July 28, 1903,	Edward Double,	Under-reamers.
687,296,	Nov. 26, 1901,	Jacob S. Brown,	“ “
674,793,	May 21, 1901,	Edward North,	“ “
679,384,	July 30, 1901,	James M. Kellerman,	“ “
762,435,	June 14, 1904,	Thomas A. O'Donnell, & Arthur G. Willard.	“ “
683,352,	Sept. 24, 1901,	John C. Swan,	“ “
496,317,	Apr. 25, 1893,	Patrick H. Mack,	“ “

[10]

717,469,	Dec. 30, 1902,	John C. Swan,	“ “
748,054,	Dec. 29, 1903,	Edward Double,	“ “
796,197,	Aug. 1, 1905,	“ “	“ “
403,877,	May 21, 1889,	Jeremiah E. Day,	“ “
668,340,	Feb. 19, 1901,	William Plotts,	“ “
819,042,	May 1, 1906,	Alexander Cummings,	“ “
704,136,	July 8, 1902,	J. P. Smith,	“ “

and had been so described and set forth in the following printed publications, to wit:

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1901, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1903, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

Defendant further alleges that the alleged improvement purporting to be patented by said pretended letters patent No. 827,595, or things in all substantial and material respects the same as said alleged improvement, or material or substantial parts thereof, and prior to the alleged or any invention or discovery thereof by complainant, had been known

to and used by others in the United States of America, and particularly by the following, to wit:

Union Oil Tool Company, a corporation organized under the laws of the State of California, and having a factory and shop at Santa Paula, Ventura County, California, and Los Angeles, California, and the officers and workmen of said corporation, all of whom had such knowledge and did use the same, both at said Santa Paula, California, and Los Angeles, California; [11]

Edward Double, residing in the city of Los Angeles, California, who had such knowledge and use, both at Santa Paula, California, and Los Angeles, California;

Thomas A. O'Donnell and Arthur G. Willard, both of Los Angeles, California, who had such knowledge and use in the city of Los Angeles, California, and in the county of Los Angeles, California;

Leidecker Tool Company, a corporation of Marietta, Ohio, who had such knowledge and use at Marietta, Ohio.

For a counterclaim against said complainant, defendant alleges:

That heretofore and prior to the 26th day of October, 1901, one Edward Double, then of Santa Paula, in the State of California, was the original, first and sole inventor of a certain new and useful under-reamer, not known or used by others before his invention or discovery thereof, or patented or described in any printed publication in the United States of America, or any foreign country, before his invention or discovery thereof, or more than two years

prior to his application for letters patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to such application for letters patent therefor, and not abandoned.

That said Edward Double, so being the first and sole inventor of the said underreamer, heretofore, to wit, on the 26th day of October, 1901, made due application in writing, in due form of law, to the Commissioner of Patents of the United States of America, in accordance with the then existing laws of the United States of America in such case made and provided, and complied in all respects with the conditions and requirements of said laws. [12]

That all the requirements of law and of the rules of the United States Patent Office, in such case made and provided, having been fully complied with, and upon due proceedings had in said Patent Office of the United States, in full accordance with the then existing laws and rules of the United States Patent Office, relating to the grant and issuance of letters patent for inventions, and after due examination made by the Commissioner of Patents as to the novelty and patentability of the said invention, as required by law, and the aforesaid invention or underreamer having been found by the Commissioner of Patents to be new, novel, useful and patentable under said laws and the rules of the United States Patent Office, on the 28th day of July, 1903, letters patent of the United States of America numbered 734,833, signed, sealed and executed in due form of law, and bearing date the day and year aforesaid, were

granted, issued and delivered by the Commissioner of Patents of the United States of America, to the said Edward Double, whereby there was granted and secured to the said Edward Double, his heirs, legal representatives and assigns, for the term of seventeen years from and after the said 28th day of July, 1903, the exclusive right and liberty of making, using and vending to others to be used, the said underreamer throughout the United States and the Territories thereof, as by said original letters patent or a duly certified copy thereof, to be here in court produced as may be required, will more fully and at large appear :

Defendant alleges that defendant is now and for many years has been the exclusive licensee under said letters patent No. 734,833, and that by direct and mesne instruments in writing, the said Edward Double, his grantees and assigns, did grant to defendant the exclusive right, liberty and privilege of manufacturing underreamers embodying and containing said invention [13] set forth, described and claimed in and by said letters patent No. 734,833, and that said exclusive license is still in full force and effect.

That the said underreamer set forth, described and claimed in said letters patent No. 734,833, has gone into great and general use and has displaced all other underreamers or tools for said use from the market and become the underreamers in general use in underreaming wells, and that the exclusive rights of defendant in and under said letters patent No. 734,833 have been generally respected and acknowledged by

the trade and by users of such tools, and the validity of the said letters patent, and the title of defendant thereto, have been generally acknowledged and acquiesced in by all manufacturers, the trade and users of the said tool, and save for the infringement thereof by the complainant herein named, defendant has had and would now enjoy and possess the exclusive right and liberty of making, using and vending the said underreamers, and but for the wrongful and unlawful acts of the complainant herein named, defendant would now be in the possession and enjoyment of the exclusive right and liberty of so making, using and vending to others to be used the said invention and underreamer; and defendant further shows unto your Honors that the exclusive right and liberty of making, and using and vending the said patented invention is of great value and advantage to this defendant, and defendant has been, and but for the wrongful and unlawful acts of the complainant herein named, would be receiving great advantages, benefits and profits therefrom.

Defendant further shows unto your Honors that all underreamers manufactured, sold or used by defendant or defendant's grantors, since the day of the date of the grant, issuance and delivery of the said letters patent, have been plainly marked by [14] defendant with the word "patented," together with the day and date of the grant and issuance of said letters patent; and defendant further shows unto your Honors that the said complainant has had full, complete and personal knowledge of, and has been notified in writing, prior to the filing of

the Bill of Complaint herein, of defendant's rights under said letters patent, and has been notified in writing that the acts of said complainant herein referred to, in making, using and vending to others to be used underreamers embodying and containing said invention set forth and claimed in said letters patent, are in violation and infringement of the exclusive rights of defendant under said letters patent, and complainant has been requested to refrain and desist therefrom but has refused so to do, but has continued to manufacture, use and sell underreamers embodying and containing said invention set forth and claimed in said letters patent after full knowledge of the rights of defendant under said letters patent.

Defendant further shows unto your Honors that since the grant, issuance and delivery of said letters patent to defendant and defendant's grantors and assignors, as set forth, the complainant well knowing the facts hereinbefore set forth and having full notice of the rights of defendant in the premises and against the will of defendant, without the license or authority of defendant or of any of defendant's grantors, and in violation of said exclusive rights and liberties granted and secured to defendant by the said letters patent, has been and is now within the Southern District of California aforesaid, constructing and using and selling and causing to be constructed and sold and used, underreamers containing and embodying the invention set forth, described, and claimed in the letters patent No. 734,833, and intends and threatens to continue so to do, but as to how many or to what extent exactly, defendant does

not [15] know and has not been informed, but prays discovery thereof; that by reason of said violation and infringement of the exclusive rights of defendant under the said letters patent by the said complainant, defendant has been and is being deprived of large profits and advantages which might and otherwise would accrue to the benefit of defendant, and the said wrongful infringing acts of the complainant have been and are now causing defendant great and irreparable damage; and defendant shows unto your Honors that it has suffered damage thereby in the full sum of one hundred fifty thousand dollars (\$150,000) as near as defendant can now estimate the same.

Defendant prays that complainant may be decreed to account for and pay over unto defendant, the profits thus unlawfully derived from the violation of defendant's rights, and the damages sustained by defendant by reason of such violation and infringement of defendant's rights, and be restrained from any further violation of said rights. Defendant prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining the said complainant, Elihu C. Wilson, his agents, servants, associates, confederates, attorneys and workmen, and each and every of them, from any further construction, sale or use in any manner, of said patented invention, or any part thereof, in violation of defendant's rights as aforesaid; and that the underreamers now in possession, control or use of the said complainant may be destroyed under order of this court;

and that your Honors upon the rendering of the decree above prayed, may assess, or cause to be assessed, in addition to the profits to be accounted for as aforesaid, the damages defendant has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times the amount of such assessment under the [16] circumstances of the wilful and unjust infringement by said complainant as herein set forth; and defendant further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court, enjoining and restraining the complainant, his agents, servants, associates, confederates, attorneys and workmen, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent, and for such other and further relief as the equity of the case may require and to your Honors may seem meet.

UNION TOOL COMPANY.

By FREDERICK S. LYON,

Its Solicitor.

FREDERICK S. LYON,

Solicitor and of Counsel for Defendant.

[Endorsed]: No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Answer. Due service and receipt of a copy of the within Answer is hereby admitted this 5th day of April, 1913. Raymond Ives Blakeslee, Solicitors for Complainant. Filed Apr. 5, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Fred-

erick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [17]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Notice of Motion to Strike Out Counterclaim of Defendant.

FOR INFRINGEMENT OF LETTERS PATENT.

To Frederick S. Lyon, Esq., Solicitor and of Counsel for Defendant:

You will please take notice that I will present to his Honor, Olin Wellborn, Judge of the District Court of the United States for the Southern District of California, Southern Division, on the 19th day of May, 1913, or as soon thereafter as practicable, a Motion, a copy of which is hereto attached, praying that the counterclaim, set up and included by the defendant in its Answer interposed to the Bill of Complaint, filed in the above-entitled cause, be stricken out for insufficiency, and upon the grounds in said Motion stated.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

Dated May 13, 1913.

[Endorsed]: In the United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. For infringement of Letters Patent. A-4—Equity. Notice of Motion to Strike Out Counterclaim. Service of a copy of the within Notice acknowledged this 13th day of May, 1913. Frederick S. Lyon, Solicitor and of Counsel for Defendant. Raymond Ives Blakeslee, Solicitor and of Counsel for Complainant, 728-29-30 California Bldg., 2d St. and S. Broadway, Los Angeles, California. [18]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Motion to Strike Out Counterclaim Set Up in Answer
of Defendant.**

FOR INFRINGEMENT OF LETTERS
PATENT.

To the Honorable the Judges of the District Court of
the United States in and for the Southern Dis-
trict of California, Southern Division.

Comes now the complainant herein and moves the

Court to strike out the counterclaim set up by the defendant in the Answer by it interposed to the Bill of Complaint, as insufficient on the following grounds:

1. That said counterclaim fails to show, and the defendant fails to allege, and it does not appear in any respect from said counterclaim, that the defendant is the owner of the right, title and interest, or any part thereof, in, to and under the letters patent in said counterclaim alleged to be infringed by complainant.

2. That it does not appear from said counterclaim, nor is it alleged by defendant, who is the owner or who are the owners of the right, title and interest in, to and under said letters patent alleged in and by said counterclaim to be infringed by the complainant.

3. That it is not shown in and by said counterclaim, nor is it alleged by said defendant, in what manner and at what time said defendant obtained or acquired or was granted any right, liberty and privilege, whatsoever, exclusive or otherwise, of manufacturing underreamers embodying and containing the [19] invention set forth, described and claimed in and by the letters patent alleged in and by said counterclaim to be infringed by the complainant.

4. That said counterclaim fails to specify and allege in what respects and with respect to what claims and portions thereof, the complainant herein is infringing or has infringed said letters patent alleged in said counterclaim to be infringed by the complainant.

5. That said counterclaim fails to specify and allege at what place the complainant has infringed or is infringing the letters patent alleged in and by said counterclaim to be infringed by the complainant.

6. That said counterclaim does not state and set forth facts sufficient to constitute a valid counterclaim or cause of action in equity against complainant.

And this complainant prays for an order providing that pending the hearing and determination of this Motion, and procedure pursuant to such determination, all other proceedings in this suit may be stayed.

Dated May 13, 1913.

ELIHU C. WILSON.

By RAYMOND IVES BLAKESLEE,

His Solicitor.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

[Endorsed]: A-4—Equity. In the United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. For Infringement of Letters Patent. Motion to Strike Out Counterclaim. Service of a copy of the within Motion acknowledged this 13th day of May, 1913. Frederick S. Lyon, Solicitor and of Counsel for Defendant. Filed May 13, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Raymond Ives Blakeslee, Solicitor and of Counsel for Complainant, 728-29-30 California Bldg., 2d St. and S. Broadway, Los Angeles, California. [20]

At a stated term, to wit, the July term, A. D. 1913, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the fourteenth day of July, in the year of our Lord, one thousand nine hundred and thirteen: PRESENT: The Honorable OLIN WELLBORN, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order That Counterclaim Set Up in Answer of Defendant be Stricken Without Prejudice.

This cause coming on by consent to be heard on complainant's motion to strike out the counterclaim set up and included in defendant's answer to the bill of complaint herein, and also coming on regularly on this day to be set down for hearing and argument; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant, and Frederick S. Lyon, Esq., appearing as counsel for defendant; now, on motion of Raymond Ives Blakeslee, Esq., of counsel for complainant, and with the consent of Frederick S. Lyon, Esq., of counsel for defendant, it is ordered that the counterclaim set up and included by the

defendant in its answer interposed to the bill of complaint filed in the above-entitled cause be stricken from said answer without prejudice, and it is further ordered that said cause be, and the same hereby is continued for the term for said hearing and argument thereof.

[Endorsed]: No. A-4—Eq. United States District Court, Southern District of California. Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Striking Out Counterclaim Set Up and Included in Answer Interposed to Complaint. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [21]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Motion for Order Consolidating Causes and Notice
Thereof.**

Please take notice that on Monday, January 11, 1915, at the hour of 10:30 o'clock A. M., or as soon thereafter as counsel can be heard, at the courtroom

of Honorable Judge Bledsoe, in the Federal Building, Los Angeles, California, I shall move this Honorable Court for an order consolidating with this cause of action the cause of action set forth in the Bill of Complaint subsequently filed in this court between the same parties and entitled Wilson versus Union Tool Company, In Equity, No. B-62, and alleging further infringement of the same patent sued on herein. This motion will be based upon the proceedings in this case and including the record and files thereof and proofs taken on behalf of complainant therein, together with the Bill of Complaint filed in said subsequent suit.

Dated December 31, 1914.

RAYMOND IVES BLAKESLEE,

Solicitor for Complainant, [22]

To FREDERICK S. LYON, Esq.,

Solicitor for Defendant.

Merchants Trust Building, Los Angeles, California.

[Endorsed]: In Equity. No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Motion and Notice Thereof. Received a copy of the within Motion and Notice thereof this 31st day of December, 1914. Frederick S. Lyon, Solicitor for Defendant. Filed Jan. 2, 1915. Wm. M. Van Dyke, Clerk. By Chas N. Williams, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [23]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Second Bill of Complaint.

For Infringement of Letters Patent.

To the Honorable, the Judges of the District Court
of the United States, in and for the Ninth Cir-
cuit, Southern District of California, Southern
Division:

Elihu C. Wilson, a citizen of the State of Cali-
fornia, and resident of Los Angeles, county of Los
Angeles, California, brings this Bill of Complaint
against Union Tool Company, a corporation organ-
ized and existing under and by virtue of the laws of
the State of California, and having its principal
place of business in the city of Los Angeles, in said
State of California, in said Southern District of Cali-
fornia, Southern Division thereof; and thereupon,
your orator complaining, shows unto your Honors:

I

That heretofore and prior to the 28th day of
November, 1905, your orator, Elihu C. Wilson, was
the original, first and sole inventor of a certain new
and useful underreamer, not known or used by
others, before his invention or discovery thereof, or

patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two (2) years prior to his application for letters patent thereon in the United States of America, and not in public use or on sale in the United States of America for more than two (2) years prior to said application for letters patent therefor, and not abandoned, and not patented [24] in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of said application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued, and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assign, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the

United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully appear from said original letters patent or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions. [25]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practised by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon said defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and

sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said letters patent No. 827,595, and in the exclusive rights of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [26]

V.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the county of Los Angeles, and State of California, and within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used,

leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly set forth and defined by claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the Underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and threatens and intends to continue so to do, and will continue so to do unless restrained by this Court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage. [27]

VI.

That for all the wrongs herein complained of, your orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendants may, if it can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with costs of suit;

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights, and that the defendant be restrained from any further violation of said rights;

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees and each and every of them from any further construction, use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering

the decree above prayed, may assess, or cause to be assessed in addition to the profits to be [28] accounted for as aforesaid, the damages your orator has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the wilful and unjust infringement by said defendant herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the Seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may seem proper and meet and in accordance with the equity of the case and with good conscience.

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your Honors may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

728-29-30 California Bldg.,

Los Angeles, Cal. [29]

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 23rd day of December, 1914, before me personally appeared Elihu C. Wilson, who being duly sworn did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint; that he has read the Bill and knows the contents thereof, and that the same is true to his knowledge and belief, except in so far as matters are therein stated on information and belief, and as to those matters, he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 23d day of December, 1914.

[Seal]

FRANCIS L. ISGRIGG,

Notary Public in and for the County of Los Angeles,
State of California.

My Commission expires Jan. 30, 1917.

[Endorsed]: In Equity. No. B-62—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Bill of Complaint. Filed Dec. 28, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk.

Raymond Ives Blakeslee, 728-30 California Building,
Los Angeles, Cal., Solicitor for Complainant. [30]

*In the United States District Court, Southern Dis-
trict of California, Southern Division.*

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Motion to Consolidate.

Now comes the complainant by his solicitor and moves the Court for an order consolidating the cause of action herein with that set forth in suit No. A-4—In Equity, between Elihu C. Wilson, Complainant, and Union Tool Company, Defendant, respectively the complainant and defendant herein, the Bill of Complaint herein being in the nature of a supplemental Bill; and this motion being complementary to a similar motion heretofore presented to this Court in said equity suit No. A-4 and undetermined. This motion will be based upon the records and files in this case and upon the proceedings taken in said equity suit No. A-4 and including the records and files thereof and proofs taken on behalf of complainant therein.

RAYMOND IVES BLAKESLEE,
Solicitor and Counsel for Complainant.

[Endorsed]: In Equity—No. B-62 United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Motion to Consolidate. Received a copy of the within Motion to Consolidate this 9th day of January, 1915. Frederick S. Lyon, Solicitor for Defendant. Filed Jan. 9, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [31]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Motion for Leave to Amend Bill of Complaint and to Consolidate.

Please take notice that on Monday, February 8th, 1915, at the hour of ten (10) o'clock A. M., or as soon thereafter as counsel can be heard, I shall present a motion before this Court, in the courtroom thereof in the Federal Building, Los Angeles, California, for leave to file the annexed Amended Bill of Complaint herein; and for a further order, consolidating the Cause of Action herein with that set

forth in suit No. A-4 In Equity, between Elihu C. Wilson, Complainant and the Union Tool Company, Defendant, respectively the complainant and defendant herein, the said Bill of Complaint and the Amended Bill of Complaint herein being in the nature of a Supplemental Bill, and this Motion being as to consolidation complementary to the similar motion heretofore noticed to be presented to this Court in said equity suit No. A-4.

This Motion will be based upon the records and files in this case and upon the proceedings taken in said equity suit No. A-4 and including the records and files thereof and proofs taken on behalf of complainant therein.

RAYMOND IVES BLAKESLEE,
Solicitor and Counsel for Complainant.
To FREDERICK S. LYON, Esq.,
Merchants Trust Building,
Los Angeles, California,
Solicitor for Defendant. [32]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Amended Bill of Complaint.**FOR INFRINGEMENT OF LETTERS
PATENT.**

To the Honorable, the Judges of the District Court
of the United States, in and for the Ninth Cir-
cuit, Southern District of California, Southern
Division:

Elihu C. Wilson, a citizen of the State of Cali-
fornia, and resident of Los Angeles, County of Los
Angeles, California, brings this Bill of Complaint
against the Union Tool Company, a corporation or-
ganized and existing under and by virtue of the
laws of the State of California, and having its prin-
cipal place of business in the City of Los Angeles,
in said State of California, in said Southern Dis-
trict of California, Southern Division thereof; and
thereupon, your orator complaining, shows unto
your Honors:

I.

That heretofore and prior to the 28th day of No-
vember, 1905, your orator, Elihu C. Wilson, was the
original, first and sole inventor of a certain new and
useful underreamer, not known or used by others,
before his invention or discovery thereof, or pat-
ented or described in any printed publication in the
United States of America or any foreign country,
before his invention or discovery thereof, or more
than two (2) years prior to his application for let-
ters patent thereon in the United States of America,
and not in public use or on sale in the United States
of [33] America for more than two (2) years

prior to said application for letters patent therefor, and not abandoned, and not patented in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of such application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued, and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assign, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully appear from said original

letters patent, or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions. [34]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practiced by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant, long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon such defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said letters patent No. 827,595, and in the exclusive rights

of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [35]

V.

And your orator further shows unto your Honors that there is pending between the parties to this suit in equity in the same court, another suit in equity entitled Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, No. A-4, in which infringement by the defendant herein is charged with respect to the letters patent sued under herein; that certain proofs have been taken on behalf of complainant in said other suit and an election has been made to stand upon claims sixteen and seventeen of said patent in suit; that since the commencement of taking proofs in said other suit, defendant herein, and in said other suit, has been found to have departed from its original procedure in the manufacture and sale of underreamers, and to have further and more elaborately infringed the letters patent sued under therein and herein, thereby as your orator alleges upon information and belief, infringing, or further

infringing, claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, and 19 of the said patent therein and herein sued under, all as hereinafter more particularly alleged.

VI.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly as set forth and defined by claims [36] 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and

of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [35]

V.

And your orator further shows unto your Honors that there is pending between the parties to this suit in equity in the same court, another suit in equity entitled Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, No. A-4, in which infringement by the defendant herein is charged with respect to the letters patent sued under herein; that certain proofs have been taken on behalf of complainant in said other suit and an election has been made to stand upon claims sixteen and seventeen of said patent in suit; that since the commencement of taking proofs in said other suit, defendant herein, and in said other suit, has been found to have departed from its original procedure in the manufacture and sale of underreamers, and to have further and more elaborately infringed the letters patent sued under therein and herein, thereby as your orator alleges upon information and belief, infringing, or further

infringing, claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, and 19 of the said patent therein and herein sued under, all as hereinafter more particularly alleged.

VI.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly as set forth and defined by claims [36] 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and

threatens and intends to continue so to do, and will continue so to do unless restrained by this court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage.

VII.

That for all the wrongs herein complained of, your orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendant may, if he can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with the costs of suit. [37]

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights and that defendant be restrained from any further violation of said rights.

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees, and each and every of them, from any further construction, use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering the decree above prayed, may assess, or cause to be assessed in addition to the profits to be accounted for as aforesaid, the damages your orator has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the willful and unjust infringement by said defendant as herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may

seem proper and meet and in accordance with the equity of the case and with good conscience. [38]

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your Honors may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

728-29-30 California Bldg.,

Los Angeles, California.

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 29th day of January, 1915, before me personally appeared Elihu C. Wilson, who being duly sworn did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint; that he has read the Bill and knows the contents thereof, and that the same is true to his knowledge and belief, except in so far as matters are therein stated on information and belief, and as to these matters he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 29th day of January, 1915.

[Seal]

TYCIE FULLEN,
Notary Public in and for the County of Los Angeles,
State of California.

My Commission expires May 3, 1918. [39]

[Endorsed]: No. B-62. United States [District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Motions and Notice of Motion for Leave to Amend and Consolidate. Received a copy of the within Motions, this 29th day of January, 1915. Frederick S. Lyon, Solicitor for Defendant. Filed Jan 30, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. G. [40]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the eighth day of February, in the year of our Lord one thousand nine hundred and fifteen. PRESENT: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Motion for Leave to Amend Bill of Complaint, etc.

This cause coming on this day to be heard on a motion for leave to amend the bill of complaint, and also coming on to be heard on a motion to consolidate said cause with cause No. A-4—Equity, between the same parties; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motion to amend bill having been presented by counsel; it is ordered that complainant's motion for leave to amend his bill of complaint be and the same hereby is granted; and it is further ordered that defendant's motion to dismiss the bill of complaint be taken as a motion to dismiss the bill of complaint as hereafter amended pursuant to leave now granted, and it is further ordered upon counsel for complainant waiving service of notice of motion to dismiss, that this cause be, and the same hereby is continued one (1) week for hearing on motion to dismiss bill of complaint and the motion to consolidate this cause with cause No. A-4—Equity. [41]

At a stated term, to wit, The January term, A. D. 1915 of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the court-room thereof, in the city of Los Angeles, on Monday, the fifteenth day of February, in the year of our Lord, one thousand nine hundred and fifteen. Present: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Motion to Consolidate Causes, etc.

This cause coming on this day to be heard on a motion to consolidate this cause with case No. B-62—Equity, between the same parties, and also to be heard on defendant's motion to dismiss the bill of complaint; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motions having been presented by counsel for the respective parties; and this cause having been submitted to the Court for its consideration and decision on said motions and the presentation thereof; it is by the court ordered that the motion to consolidate this cause with case No. B-62—Equity, between the same parties be. and the same is hereby granted, and

that, accordingly this cause be, and the same hereby is consolidated with said cause No. B-62—Equity Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, under the number and title of said cause A-4—Equity; and it is further ordered that defendant's motion to dismiss the bill of complaint in No. A-4—Equity be, and the same is hereby denied, defendant being by the Court assigned to answer the bills of complaint in this cause as now consolidated within thirty (30) days. [42]

[Endorsed]: No. A-4—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Granting Motion to Consolidate and to Denying Motion to Dismiss, in A-4—Equity. Filed Sep. 13, 1916, Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [43]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the fifteenth day of February, in the year of our Lord, one thousand nine hundred and fifteen; PRESENT: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Order Denying Motion to Dismiss Amended Bill of
Complaint, etc.**

This cause coming on this day to be heard on defendant's motion to dismiss the amended bill of complaint; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motion to dismiss the amended bill of complaint having been presented by counsel; and this cause having been submitted to the Court for its consideration and decision on said motion of defendant; it is now by the Court ordered that defendant's motion to dismiss the amended bill of complaint be, and the same hereby is denied; and it is further ordered, in accordance with the action this day taken in cause No. A-4—Equity, that this cause be, and the same is hereby consolidated with said cause No. A-4—Equity, defendant being by the Court assigned to answer the bills of complaint in this cause as now consolidated within thirty (30) days.

[Endorsed]: No. B-62—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Or-

der Denying Motion to Dismiss Amended Bill and Consolidating This Cause With Cause A-4—Eq. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [44]

United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Answer to Second Bill of Complaint.

Answering the Bill of Complaint of the complainant:

Defendant denies that at any time prior or subsequent to or on November 28th, 1905, complainant was the original, first or sole inventor of the alleged or any new or useful underreamer; denies that the same was not known or used by others before complainant's alleged or supposed invention or discovery thereof, or that the same had not been patented or described in any printed publication in the United States of America or any foreign country prior to complainant's alleged or supposed invention or discovery thereof or more than two years prior to complainant's alleged application for letters patent thereon in the United States of America; denies that

the same had not been in public use or on sale in the United States of America for more than two years prior to complainant's alleged application for letters patent therefor; defendant does not know and is not informed, save by said Bill of Complaint, as to whether complainant on November 28, 1905, or on or at any date or time, made application in due form of law or otherwise or at all, in accordance with the then existing laws, or otherwise or at all, for letters patent of the United States upon of for said alleged or pretended invention and therefore denies the same and prays that complainant be required to make strict proof thereof; admits that on July 31, 1906, pretended letters patent numbered [45] 827,595, were attempted to be granted or issued to complainant, but specifically alleges that said pretended letters patent were and are wholly void and of no effect; denies that such pretended letters patent were issued or granted according to or in due form of law or that thereby the alleged or any rights were granted or secured to complainant; denies that the pretended invention alleged to be set forth, described or claimed in or by said pretended letters patent is of great or any value whatever, or that the complainant has upon each and every underreamer manufactured, used or sold by complainant, marked thereon the word "patented" together with the day and date of said pretended letters patent; admits that on or about February 3, 1913, defendant received a notice that complainant claimed this defendant was infringing upon said pretended letters patent, but denies that

defendant ever had any notice of any such claim prior thereto; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said pretended letters patent or in the alleged and pretended exclusive rights of complainant therein or thereunder; denies that the said alleged exclusive rights are, or except for the act or acts of this defendant would be, of great or incalculable or any value whatever to complainant.

Defendant denies that at any time whatever, either in the Southern District of California or elsewhere, it has ever made or used or leased or sold any underreamer or underreamers containing or embracing said alleged or pretended invention so alleged to be set forth, described, claimed or patented in or by said pretended letters patent No. 827,595, or has in any manner whatsoever infringed upon the alleged exclusive rights or right of complainant by virtue of said pretended letters patent, or that defendant has ever threatened or proposed or intended so to do; [46] denies that defendant has ever realized any gain, profit or advantage whatever from the use in any manner whatsoever of said pretended invention, or that by reason of any act or deed of defendant in the premises, complainant has suffered or will suffer great, irreparable or any injury whatsoever.

Defendant alleges that said letters patent No. 827,595 are void for the reason that the said Wilson unjustly obtained the same for what was in fact previously invented by another, to wit, Alexander Cummings, formerly residing in the city of Los Angeles,

California, and now a resident of Baldwin Park, California, who was using reasonable diligence in adapting and perfecting the same.

Defendant further alleges that the alleged and pretended invention in underreamers pretended to be patented in or by said patent No. 827,595, or things in all material and substantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant and more than two years prior to the alleged application of said complainant for said pretended letters patent, been patented and described in printed publications in the United States, and particularly in the following letters patent of the United States:

Number.	Date.	Inventor.	Invention.
734,833,	July 28, 1903,	Edward Double,	Under-reamers.
687,296,	Nov. 26, 1901,	Jacob S. Brown,	" "
674,793,	May 21, 1901,	Edward North,	" "
679,384,	July 30, 1901,	James M. Kellerman,	" "
762,435,	June 14, 1904,	Thomas A. O'Donnell & Arthur G. Willard,	" "
683,352,	Sept. 24, 1901,	John C. Swan,	" "
496,317,	Apr. 25, 1893,	Patrick H. Mack,	" "
717,469,	Dec. 30, 1902,	John C. Swan,	" "
748,054,	Dec. 29, 1903,	Edward Double,	" "
[47]			
796,197,	Aug. 1, 1905,	Edward Double,	" "
403,877,	May 21, 1889,	Jeremiah E. Day,	" "
668,340,	Feb. 19, 1901,	William Plotts,	" "
819,042,	May 1, 1906,	Alexander Cummings,	" "
704,136,	July 8, 1902,	J. P. Smith,	" "

and had been so described and set forth in the following printed publications, to wit:

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1901, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1903, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

Defendant further alleges that the alleged improvement purporting to be patented by said pretended letters patent No. 827,595, or things in all substantial and material respects the same as said alleged improvement, or material or substantial parts thereof, and prior to the alleged or any invention or discovery thereof by complainant, had been known to and manufactured, sold and used by others in the United States of America, and particularly by the following, to wit:

Union Oil Tool Company, a corporation organized under the laws of the State of California, and having a factory and shop at Santa Paula, Ventura County, California, and Los Angeles, California, and the officers and workmen of said corporation, all of whom had such knowledge and did use the same, both at [48] Santa Paula, California, and Los Angeles, California;

Edward Double, residing in the city of Los Angeles, California, who had such knowledge and use, both at Santa Paula, California, and Los Angeles, California;

Thomas A. O'Donnell and Arthur G. Willard, both of Los Angeles, California, who had such knowledge

and use in the city of Los Angeles, California, and in the county of Los Angeles, California;

Leidecker Tool Company, a corporation, of Marietta, Ohio, who had such knowledge and use at Marietta, Ohio.

F. F. Collins Manufacturing Company, of San Antonio, Texas, who had such knowledge and use and made and sold the same at San Antonio, Texas.

San Antonio Machinery Supply Company, of San Antonio, Texas, who had such knowledge and use and made and sold the same at San Antonio, Texas.

James Copelin, residing in the city of San Antonio, Texas, who had such knowledge and use and manufactured and sold the same at San Antonio, Texas.

For a further and separate defense the defendant alleges:

That long prior to the filing of complainant's Bill of Complaint herein and to the commencement of this suit, complainant filed its Bill in Equity in this court against this defendant alleging the grant, issuance and delivery to complainant of the said pretended letters patent numbered 827,595, and alleging the infringement thereof by this defendant, all as will more fully and at large appear from said Bill of Complaint and the records, files, papers, documents and proceedings in said suit, which is designated as No. A-4 in equity in this court;

That in said suit defendant appeared and answered that said Bill of Complaint in said suit No. A-4 in equity in this court is still pending, undecided and undetermined and covers, embraces and extends to

the pretended cause or causes of action attempted to be set forth or alleged in or by the amended Bill [49] of Complaint in this suit, and that in or by said Bill of Complaint in suit No. A-4 in equity, complainant can secure any and all relief against this defendant in this court (if entitled to any whatsoever), concerning, respecting or referring to in any manner the said alleged letters patent or any infringement thereof by this defendant.

WHEREFORE defendant prays that this suit be dismissed and that it have judgment against complainant for its reasonable costs and disbursements in its behalf sustained.

UNION TOOL COMPANY,
By FREDERICK S. LYON,
Its Solicitor.

FREDERICK S. LYON,
Solicitor and of Counsel for Defendant.

State of California,
County of Los Angeles,—ss.

Lora M. Bowers, being first duly sworn, deposes and says that she is a stenographer in the employ of Frederick S. Lyon, and of legal age; that on Tuesday, March 16, 1915, she served the attached Answer upon Raymond Ives Blakeslee, solicitor for the complainant in the above-entitled suit, at his office, 728-730 California Building, in the city of Los Angeles, California, by handing to and leaving with Alfred Daehler, a draftsman in the employ of said Raymond Ives Blakeslee, a true and correct copy of said Answer, said Alfred Daehler being then and there in

charge of the office of said Raymond Ives Blakeslee.

LORA M. BOWERS.

Subscribed and sworn to before me at Los Angeles, California, this 16th day of March, 1915.

[Seal]

FREDERICK W. SMITH,

Notary Public in and for Los Angeles County, State of California. [50]

[Endorsed]: No. B-62. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. No. B-62. Answer. Received a copy of the within Answer this March 16, 1915. ———, Solicitor for Complainant. Filed Mar. 17, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Frederick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [51]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the nineteenth day of April, in the year of our Lord one thousand nine hundred and fifteen. PRESENT: The Honorable BENJAMIN BLEDSOE, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

and

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Consolidating Causes.

These causes coming on to be heard on complainant's motion made in cause No. 4—Equity, limiting the time within which the respective parties shall complete their proofs; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and it appearing that an order has heretofore been made consolidating said cause No. B-62—Equity with said cause No. A-4—Equity, but that no answer had been filed on behalf of defendant in No. B-62—Equity prior to the making of said order of consolidation, and that, therefore, said order of consolidation may have been, as to time, improvidently made; and it appearing that defendant's answer in said cause No. B-62—Equity is now on file

therein, it is now ordered that said cause No. B-62—Equity be, and the same [52] hereby is consolidated with said cause No. A-4—Equity, without prejudice, however, to the right of defendant to move, at or before the time of trial to set aside said order of consolidation, if so advised; and it is further ordered, pursuant to the stipulation of the parties, by their solicitors of record, in open court, that the testimony in said consolidated cause shall be taken as the testimony in said cause No. A-4—Equity was to be, and would have been, taken if no order of consolidation had been entered, as determined by the order of Court heretofore entered in said cause No. A-4—Equity, fixing the manner of taking proofs in said cause; and counsel for complainant having announced that, the proofs already taken and filed on behalf of complainant in case No. A-4—Equity make out complainant's *prima facie* case, not only in case No. A-4—Equity, but also in No. B-62—Equity, and are relied upon and are now offered as complainant's *prima facie* case in said consolidated cause; it is ordered by the Court, that said proofs may be considered and treated as complainant's *prima facie* case in the consolidated cause; and the motion of complainant for an order limiting the time within which the respective parties shall complete their proof having been argued by Raymond Ives Blakeslee, Esq., of counsel for complainant, in support thereof, and in reply by Frederick S. Lyon, Esq., of counsel for defendant; it is ordered that defendant have until and including July 31st, 1915, in which to put in its proofs in said consolidated cause,

and that complainant have until and including August 31st, in which to put in its proofs in rebuttal.

[Endorsed]: No. A-4—Eq. and B-62—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Consolidating Causes A-4—Eq. and B-62—Equity, S. D. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [53]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4.

CONSOLIDATED WITH NO. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Stipulation.

And now, to wit, July 29, 1915, it is hereby stipulated by and between the parties to the above-entitled suits by their respective solicitors:

First. That the answers of defendant be considered as amended by alleging as follows, to wit:

“That the said Elihu C. Wilson was not the original or first inventor of the alleged or pretended invention in underreamers alleged to be described, shown or claimed in or by said alleged letters patent No. 827,595, and that things in all material and sub-

stantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant, Elihu C. Wilson, and more than two years prior to the alleged application of said complainant for said pretended letters patent been known to and used by the following named:

Fred W. Jones, then a resident of Santa Paula, California, and of Los Angeles, California, and who had such knowledge and use at Los Angeles, California.

Los Angeles Well Tool Works, a corporation organized under the laws of the State of California, and having its principal place of business at Los Angeles, California, and who had such knowledge and use and made such devices in the city of Los Angeles, California. [54]

California National Supply Company, a California corporation, having its principal place of business at Los Angeles, California, and National Supply Company, a Ohio corporation having its principal place of business at Toledo, Ohio, and a branch office of place of business at Los Angeles, California, both of said corporations had knowledge and use and offered for sale said devices at Los Angeles, California.

R. H. Heron Company, a California corporation, having its principal place of business at Los Angeles, California, and who had such knowledge and use and offered for sale and sold the said devices at Los Angeles, California, and at other points and places within the State of California, and elsewhere.

And that the said Fred W. Jones was the original, first and sole inventor thereof and reduced the said

invention to practise prior to the alleged invention thereof by complainant, Elihu C. Wilson, and sold a number of said devices in the State of California, United States of America, prior to the alleged invention thereof by the said Elihu C. Wilson."

Second. That defendant's time for taking proofs in this case under the Stipulation and order of the case heretofore made be and the same is hereby extended to and including August 21, 1915, and the complainant's time for taking rebuttal proofs is hereby extended to and including September 7, 1915, nothing herein to be construed to abridge the power of the Court to control all proceedings herein either as to time, form or substance.

Third. It is further stipulated and agreed that the defendant will not object to the setting of this cause for final hearing at any time that the cause may be heard provided, however, that such setting of this cause for final hearing shall not in any manner interfere with the final hearing or disposition of the suit, Cir. Ct. No. 1540, pending in this court wherein Union Tool Company et al. are complainants, and Wilson & Willard [55] Manufacturing Company are defendants.

RAYMOND IVES BLAKESLEE,
Solicitor for Complainant,
FREDERICK S. LYON,
Solicitor for Defendant.

[Endorsed]: No. A-4. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Stipulation.

Filed Jul. 31, 1915. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Frederick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [56]

*In the District Court of the United States, Southern
District of California, Southern Division.*

CONSOLIDATED CASES NOS. A-4 and B-62.
ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Memorandum of Decision.

Filed June —, 1916.

RAYMOND IVES BLAKESLEE, for Com-
plainant.

FREDERICK S. LYON, for Defendant.
CUSHMAN, District Judge:

The two foregoing causes have been consolidated and were tried and submitted at the same time as case #1540, this day decided. The consolidated cases both involve the same underreamer patent, and the general statement in No. 1540 is applicable to these causes.

The Double patent involved in that suit—#734,833—was granted in 1903. The application for the Wilson patent, #827,595, in suit in these two consolidated cases, was filed in 1905 and patent granted in 1906.

Departures by the defendant from the structure,

as described in the Double patent, it is complained by the complainant, infringe the patent in suit.

Cause A-4 was first begun, the alleged infringement being limited to claims 16 and 17 of the Wilson patent. Thereafter, it appearing, as alleged by the complainant, that defendant had further departed from the structure covered by the Double patent, by which he averred other claims of the patent in suit were infringed, cause B-62 was brought, on account of the latter alleged infringements. [57]

In both A-4 and B-62 novelty and infringement are denied; anticipation plead and the further averment made that another than Wilson was the real inventor of the device for which Wilson received the patent.

The evidence does not support the last defense and it was not urged upon the trial.

Defendant avers an infringement on the part of complainant of the Double invention, of which defendant is the licensee. This issue has already been decided in cause #1540 and need not be further considered.

In pleading anticipation, the defendant in these two causes has, insofar as a number of the alleged anticipating patents and devices set up are concerned, necessarily taken a position inconsistent with its contention in cause #1540. This, of course, is permissible, but the Court having already held in the decision this day filed in 1540 that Wilson's device infringed the Double patent and that the Double patent was not anticipated by the prior patents mentioned, it follows that, in so far as the alleged anticipating patents and devices preceded the Double in-

vention in point of time, necessarily, none of them anticipated the Wilson invention. In so far as the patents issued and the devices designed and used prior to the Wilson application for patent and not shown to be prior to the Double invention are concerned, no anticipation is found.

The O'Donnell & Willard patent #762,435 and the so-called "Jones' Round Nosed" reamer—a device never patented—have already been considered in cause #1540, this day decided. No further discussion of them is required. The Jones' so-called "Removal Bowl" reamer is the device, outside of the Double invention, chiefly relied upon in argument, by the defendant, to [58] show anticipation of the patent in suit. It will be considered in connection with cause B-62.

Claims 16 and 17 of the patent in suit in A-4 are as follows:

"16. An underreamer-cutter having two shoulders and a bearing-face on the inner side of each of the two shoulders of the cutter.

"17. An underreamer-cutter having a shank and a shoulder on either side of the shank of the cutter, each of said shoulders projecting at right angles to the shank of the cutter and having a bearing-face on its inner side."

These claims are to cover the structure of an article of manufacture of a particular form, that is the cutters, and not for a machine or combination.

Many of the claims made by Wilson were repeatedly rejected by the Patent Office on reference to Double's patents. The two foregoing claims were so rejected. Upon which rejection, Wilson's patent at-

torney wrote the Commissioner of Patents the following letter under date of May 12, 1906:

“It is noted that the leader from the character 4³ in Fig. 9 of the drawings is too long. Please remove the end thereof so that the leader will terminate at the right of a vertical drawn from the right edge of the shank 4’.

“Please add the character 4³ to the left of Fig. 9 and connect the same by a leader to indicate on the left of the view the bearing corresponding to the one indicated by the character 4³ at the right of the view.

“In fig. 4 apply the character 4³ in at least two places above and below the view and connect said character by a leader to indicate the bearings at the [59] edges of the cutters 4.”

The effect of this amendment to the drawings was to make plain that the inner bearings on the face of the cutters were out nearest its lateral face—entirely beyond the perpendicular side of the shanks. In this particular the letter concludes:

“It is believed that in view of the application of the additional characters to Figs. 9 and 4, the examiner will be able to pass claims 16 and 17. The Double cutter has its bearing face entirely across the cutter instead of on the inner side of the shoulders at the sides of the shank as specified in these claims.”

Upon this representation, the rejected claims 16 and 17 were allowed. By this action and upon familiar principles of estoppel, the claims were clearly limited and restricted to a cutter with its

inner bearings confined to its sides and not extending across its face. In all of defendant's alleged infringing devices, the bearings extend all the way across the cutter.

In an underreamer made by defendant—referred to in the evidence as Type “F”—and more particularly on account of which complainant brought the second suit, B-62, the lower end of the body extension, instead of being integral, has a block interposed between the lower ends, extending downward on either side of the central slot. With this interposed block in position, the inner bearings on the cutter extend entirely across its face. With this block left out, the body extension becomes more nearly of a pronged or forked formation.

Complainant contends that the use of the interposed block is only a pretense; that, although furnished as a part of the machine, it is detrimental and not intended to be used. Complainant relies upon the *Weed Chain* case (196 Fed. 213). [60]

The question so presented is one that can only be considered in connection with combination claims and is irrelevant upon consideration of these claims upon a feature of the cutter as an article of manufacture.

No infringement of claims 16 and 17 is shown. Therefore, decree will be for defendant in A-4.

B-62.

The claims of the patent alleged to be infringed in cause B-62 are numbered 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19. While included in the bill, upon the trial the contention that claims 10 and 15 were infringed was withdrawn. Although it was later contended

that claim 10 was infringed, yet effect will be given to such withdrawal and those claims are held not infringed.

Claims 2, 4, 12, 13 and 14 are all structural claims rather than combination claims. Prongs on the lower end of the reamer body forming a fork and each prong terminating in a lug are, in substance, made features in each one of these latter claims.

The Double invention contracted, to a great extent, the unappropriated field open to invention at the time of the Wilson application and materially narrowed the range of equivalents to which those claiming under the Wilson patent are entitled.

The particulars in which the Wilson device infringes the Double invention have already been pointed out in the decision this day filed in #1540. This marks the particulars in which the Wilson device was anticipated by the Double patent.

As already pointed out, while the Double reamer, Type "F" has a reamer body the lower end of which, before the reamer is completely assembled, may be said to form a fork, yet, when assembled by a block interposed at the bottom and held immovable at all times while the reamer is in operation, the form of extension covered by the Double invention is restored. [61]

The specifications and drawings in the Double patent #734,833 only indicate an integral formation in this respect and such, the evidence shows, was the construction under it until after the granting of Wilson's patent; but the Double claims are not limited to such integral construction.

The main purpose of the forked formation, and the function to which it contributed, was, on the collapse of the cutters, to allow the cutter shank to swing in between the fork instead of the cutters swinging entirely over the lower end of the reamer body. In this respect none of the devices made by the defendant encroach in any way upon the patent in suit.

As already stated, complainant contends that defendant, in interposing the removable end block, has *restored* to a subterfuge; that it is a mere pretense of adhering to the operative form of structure covered by the Double patent; that it is not intended that the block remain in the machine in operation; that it is altogether a detriment to leave it in position while the machine is in use. There was testimony by a salesman that, on one occasion, he had seen one of defendant's reamers of Type "F" being used without an end block. There is no testimony one way or another why in this particular operation the block had been left out.

In *Weed Chain Tire Grip Co. vs. Cleveland Chain & Mfg. Co.* (196 Fed. 213) the Court found that a very palpable subterfuge was made use of to colorably avoid infringement. In *Parsons Non-Skid Co. vs. Atlas Chain Co.* (198 Fed. 399), involving the same patent in question in the *Weed Chain* case, although not the same parties, the Court found that the "natural, usual and preferential" use of the defendant's device would infringe.

There is no such conclusive state of facts in the present case. There is much testimony concerning this matter, but from the fact that, with the block left out, there would be but [62] a slight inner bear-

ing afforded the head of the cutter, I am convinced that it was not intended that the block should be discarded when the machine was in use, nor would such course likely be followed usually.

As respects the forked formation permitting the reamer to be assembled from the bottom rather than from the top, as in Double's original invention, and in so far as the claimed added advantage of being able to remachine more effectively the pronged structure of the Wilson device than the hollow slotted extension of the Double structure are concerned, these are not, directly, matters affecting in any way the mode of operation of the machine and do not show invention; nor more than mere mechanical ability. As to these claims, defendant does not infringe.

The remaining claims Nos. 8, 9, 11 and 19 are combination claims and are as follows:

"8. A hollow underreamer-body terminating in prongs forming a fork, said prongs having shoulders on their inner faces to form ways, cutters in said ways, means for operating the cutters, and a detachable cross-piece connecting the ends of the fork.

"9. An underreamer-body terminating in prongs forming a fork and provided with shoulders on the inner faces of the prongs which form cutter-ways and terminate in downwardly-projecting lugs, and cutters mounted between the prongs of said fork and having shoulders inside the fork and faces to bear on the projecting lugs."

"11. An underreamer-body terminating in

prongs forming a fork having beveled faces at the ends of its prongs, cutters having shoulders to ride over said beveled faces, and means for suspending said cutters in said body.” [63]

“19. An underreamer comprising a body terminating in two prongs, and cutters each having two shoulders and a bearing-face on the inner side of each of the two shoulders to engage said prongs.”

The essence of claim 8 is the “detachable cross-piece connecting the ends of the fork.” What has already been said is applicable to this claim.

When this claim was first presented to the Patent Office, it was rejected on reference to Double’s inventions. The Commissioner reciting that Double’s patent No. 796,197 showed “a cross-piece at the end of the forks.” After such rejection, upon further petition on behalf of the patentee, in which it was urged upon the Commissioner that Double’s No. 748,054 did not show a fork, the claim was allowed.

Unless it was intended to restrict this claim to that feature of the fork allowing the collapse of the cutters, it would appear reasonably certain that a misunderstanding was created and a mistake made in the Patent Office in this patent, at its ruling that Double’s patent 796,197 showed “a cross-piece at the end of the fork” never was answered by the patentee.

In Double’s patent No. 796,197, figures 2 and 3 show an end block and the specifications recite: “this end block 10 is secured on the ends of the walls 3³ by a pin or key 22.” The walls 3³ referred to form a fork at the lower end of the extension and the block

10 is held between these forks by the key 22, substantially in the same manner as in Type "F" claimed to infringe the patent in suit. [64]

No. 796, 197.

Patented Aug. 1, 1905.

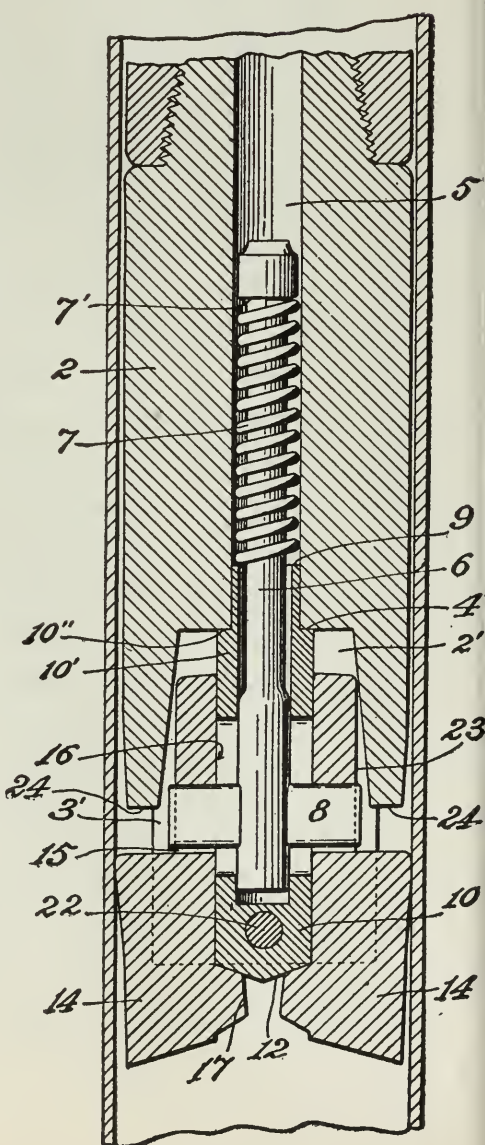
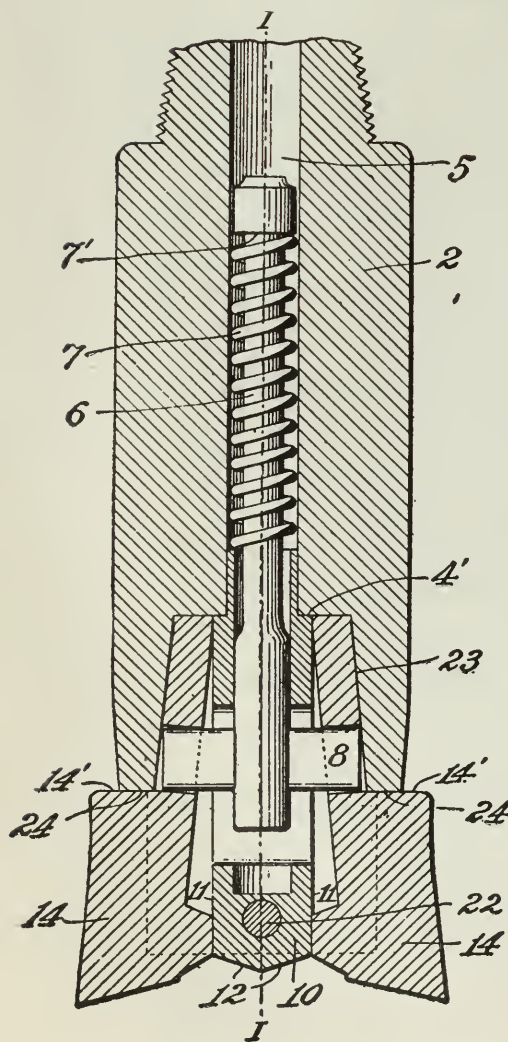
E. DOUBLE,

Underreamer,

Application filed Dec. 18, 1902.

Fig. II.

Fig. III.



To make an integral construction of separate elements or to make separate elements into an integral construction only for convenience in assembling, where it does not affect the method of operation, does not show invention. In any event, with [65] the detachable bolt between the prongs in Wilson's device, the cutters are permitted to collapse between the prongs. With the detachable block between the prongs in Type "F" of Double, the cutters collapse over the lower end of the reamer body extension, without passing between the prongs in any way, so that, in any event, as long as the defendant has confined itself to the original outline of its structure, there is no infringement of this claim.

The so-called "Jones Removable Bowl" reamer, defendant also contends, is an anticipation of the patent in suit. Only a very few machines of this design were made. These machines were manufactured and sold after the time of patenting Double's device and more than two years before the application of Wilson for the patent in suit.

In the Jones removable bowl reamer, the extension is forked to form bearings, but the enclosing bowl, which takes the place of the enclosing recesses or pockets of the Double and Wilson—in which the cutter-shanks are seated—is unbroken by any slotting, as occurs in the Double and Wilson to allow the shoulders on the same to contact with the foot of the casing to cause the collapse of the cutters.

This removable bowl reamer anticipated the forking of the lower extension of the patent in suit in so far as permitting the rod integral with the head or tee

thereon—which carries the cutters—to be inserted from the bottom is concerned. These forks in the removable bowl reamer also form ways for the cutters; but the forks in this reamer were not joined at the bottom in any way. The shanks of the cutters bore at all times against the prongs and did not collapse between them. The bearing at the end of the prongs afforded the inner face of the cutter-head in the removable bowl reamer does not anticipate the bearing afforded by the “lug” face of the patent in suit, for, in the removable [66] bowl reamer, the bearing afforded is considerably less across than the diameter of the extension of the reamer body, or bowl.

In the Double invention and conception, there was nothing in the nature of a lug or the lugs 2' of the Wilson patent. In claim 11 these lugs are not mentioned and, in so far as the action described, of the cutter shoulder riding over the beveled face of the prongs is concerned, there is neither an additional function nor advantage given to what was already present in the Double conception. Claim 11 is, therefor, not infringed.

Passing to claims 9 and 19, it has already been found that, as ways for the cutter to slide, or ride on, the faces of the prongs and lugs were no more than equivalents of the ways found in the Double invention; but, in so far as these prongs or lug-faces afforded bearings for the cutter when in reaming position is concerned, a different question is presented, and this is the feature covered by claims 9 and 19.

In the machine of the Double patent and original design, the slotted web of the lower extension helped

to form a pocket for the cutter and furnish the in-thrust and out-thrust bearing for the cutter-shanks and extended to the very bottom of the reamer body. This, necessarily, resulted in two things: an inner bearing for the cutter head, narrow as compared with the diameter of the extension upon the reamer body, and weakened to some extent by the slots therein.

In the patent in suit, the lower portion of the outer web is cut away, giving the cutter less lateral and greater in-thrust bearings. The lugs on either side are thereby created. The outer face of these lugs form bearings for the inner shoulder on the cutters. This formation enables the maker—because of the removal of the side web—to give the cutters a wider inner face and inner bearings at the outer side of the inner face of the cutter. [67]

The bearings on the “lugs” thus afforded—being in the direction of the extension of the enclosing web, necessarily, make a stronger formation than the bearing confined, as in the original Double design, to the slotted intersecting cross web. The broader cutter-head and broader bearing furnished by the device of the patent in suit, obviously, tend to lessen any tendency of the cutters to twist in operating and there is testimony in the cause, which I am inclined to credit, that, with the narrower Double cutter, the work of the reamer is more likely to result, under certain recurring conditions, in what is termed “key-holing,” that is, in the cutters which are hung opposite to each other, each getting started to cut downward in the same place and not reaming uniformly around the hole.

In the so-called "Double Improved" underreamer and in Type "F," with the interposed block in position, a lug at the lower end of the reamer body appears and, with the block removed in Type "F," two lugs appear, in relatively the same position and with relatively the same bearing faces as those upon the lugs of the patent in suit.

In so far as these bearings in defendant's "Double Improved" and Type "F" extend upon the faces of the lug or lugs beyond the sides of the diameter of the pocket in which the cutter is mounted, they are mechanical equivalents of the bearing on the outer face of the lugs in the patent in suit, and the same is true of the widened portion of the inner face of the cutter adapted to bear upon such portion of the face of the lug. It matters not that, in the device shown in evidence, the cutter head extends but a little distance upon this bearing, for to that extent, defendant has appropriated what does not belong to it and, therefore, infringes.

Upon the argument, it was contended by the defendant, that the only novelty and patentable feature of the patent in [68] suit was the pronged formation which permitted the collapse of the cutters between the prongs. If cutting away the interposed web in the Double device to allow the cutters to collapse more completely was patentable, on the same principle, cutting away the side web to give the cutter yet a greater bearing was also patentable and, if appropriated, infringement results.

In the earlier Double devices there were secondary dovetails adjacent to the junction of the cutter-head

and shanks, with corresponding ways in the inner faces of the extension, forming the recess in which the cutter is mounted on the body. These added ways caused an outward flare at the mouth of the recess, or pocket. As these ways were made deeper and the flare increased, a wider bearing would be given an opportunity for a wider faced cutter to bear upon it; but when defendant departed from this form of construction and entirely sheared away the side web of the extension to form a lug, the bearing faces to accommodate the wider cutter-head, he appropriated the invention and conception of Wilson, and particularly of the patent in suit. The fact that defendant did not appropriate the, perhaps, relatively more important conception of Wilson, whereby the cutter-shanks were allowed to collapse between the prongs, does not excuse it, or take from the infringement it has practised, for the seat or bearing of the cutter-head on these faces, or lugs, is not dependent upon the swing in collapse of the cutter-shanks between the prongs.

30 Cyc. 977, note 15.

Therefore, it is held that the machine of the defendant infringes claims 9 and 19 of the patent in suit. Decree for injunctive relief be granted. [69]

[Endorsed]: Consolidated Cases in Equity No. A—4 & B—62. In the District Court of the United States, for the Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Memorandum Decision on Merits. Filed Jun. 20, 1916. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [70]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4, B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Rehearing.

And now, to wit; June 27, 1916, on motion of defendant's solicitor, Frederick S. Lyon, a rehearing is allowed and granted.

EDWARD E. CUSHMAN,

District Judge.

[Endorsed]: No. A-4 & B-62. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson v. Union Tool Company. Order Granting Rehearing. Filed Jul. 1, 1916. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [71]

*In the District Court of the United States, Southern
District of California, Southern Division.*

IN EQUITY—CONSOLIDATED CASES

Nos. A-4—B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Memorandum of Ruling on Rehearing.

RAYMOND IVES BLAKESLEE, for Complainant.

FREDERICK S. LYON, for Defendant.

CUSHMAN, District Judge.

Prior to the order consolidating A-4 and B-62, much was said by complainant's counsel in the proceedings in A-4 to support the contention now made by defendant upon its petition for a rehearing; but it must be borne in mind that such statements were made with a view to securing—after the taking of complainant's opening proof, or the greater part of it—a stipulation from defendant's counsel to waive complainant's election (which had been announced early in the taking of such proof) to stand—in A-4—upon claims 16 and 17 of the patent and to discontinue the suit upon the other claims of the patent. The stipulation was not made; B-62 was begun and consolidated with A-4.

All that is said by complainant's counsel, after the commencement of B-62, and especially after the consolidation—upon which statements defendant relies—does not warrant the narrowing in any way of the issues tendered by the allegations of bill in B-62. Especially is this true in view of the notice given by complainant's counsel after such consolidation and before defendant began taking testimony. This notice was as follows: [72]

“Complainant gives notice to the defendant at this time that alternative to any disposition

which may be made of equity suit No. B-62, consolidated by the order of the Court with equity suit No. A-4, and thus constituting at present the suit known as equity suit No. A-4 consolidated, in which these proceedings are being conducted, namely, any disposition which may be made of said equity suit No. B-62 at the final hearing of this case with respect to such consolidation of said two cases complainant at such final hearing will reply upon claims Nos. 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19, of the Wilson Patent in suit herein. This notice of alternative attitude or position is given at this time in order that defendant may be apprised in the premises before commencing the taking of its proofs.”

That which was said by counsel for complainant after the commencement of B-62 is more reasonably explained by giving effect to the following considerations:

The main purpose in bringing B-62 was, doubtless, to determine the question of the infringement, by Type “F,” of several claims of the patent withdrawn from consideration in A-4, by the election therein made by complainant to rely entirely on claims Nos. 16 and 17. Further, such statements were rather made as statements of what had been done and said theretofore in A-4 than as announcements of what it was proposed to do in B-62.

Nothing short of a clear, unequivocal election to withdraw or discontinue the suit as to alleged infringements set out in B-62 would suffice to narrow the

issues thereby tendered. The discontinuance in A-4 as to other claims—which was worked upon the election to stand upon claims 16 and 17—did not have the effect of a judgment upon the merits, or any other than that of a voluntary nonsuit. [73]

It is not necessary to determine the effect which such election would have had if A-4 had gone to final judgment before B-62 was begun and the consolidation with A-4 ordered. Counsel for complainant having withdrawn by the election, part of his claim for infringement, had a right to withdraw such election, and the rights of the defendant growing out of the election and the proceedings subsequent to such election and prior to notice of its withdrawal, would give no ground for denying complainant's ultimate right to again broaden the issues. The only effect of such election and the proceedings thereafter and prior to notice of its withdrawal, or amendment of election, would be to give the defendant, under certain circumstances, a right to the imposition of terms and the right to demand an opportunity to further cross-examine complainant's witnesses, theretofore testifying. The defendant having made no demand for such opportunity, must be held to have waived the same, and, in consideration of the scope of the cross-examination, the court feels that it was in no way prejudiced thereby.

It is probable if any of the witnesses already examined—whose testimony was relevant to the broadened issues—had died, the testimony of such witnesses would have to be stricken, or the first suit abandoned and a new one brought. But the Court is not called

upon to decide such a question. In so far as any question of splitting this cause of action is concerned, that matter was foreclosed by Judge Bledsoe's order denying the motion to dismiss B-62.

Counsel for defendant has again urged upon the Court consideration of the merits. The forked formation of complainant's reamer body was essential to the complete collapse of the cutters; but it was not essential to the coaction in the particular in which infringement is found. The fact that, in describing, in the claims, a member of a machine which performs two functions in such a way as to disclose a feature of its [74] fitness to perform one function, which feature is not essential to the discharge of its other function, does not warrant competitors in dropping such feature and thereby appropriate one-half of the invention and its advantage, nor prevent the court from according the patentee such a range of equivalents as will fairly protect him in the substantial merits of his invention. If so, form becomes everything and substance nothing.

Rehearing denied.

[Endorsed]: In Equity. Consolidated Cases. No. A-4—B-62. In the District Court of the United States, *Southern for the* District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Memorandum on Ruling on Petition for a Rehearing. Filed Aug. 26, 1916. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. [75]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—Nos. A-4B-62—CONSOLIDATED.

(Known as A-4 Consolidated.)

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Interlocutory Decree.

The above consolidated suits having come on regularly for final hearing before the Court upon the proofs and proceedings taken and had on behalf of the respective parties, and the suits having been submitted to the Court upon argument and briefs of Raymond Ives Blakeslee on behalf of complainant and Frederick S. Lyon on behalf of defendant, and due time having been taken for consideration thereof:

IT IS ORDERED, ADJUDGED AND DECREED,

I.

That complainant Elihu C. Wilson was the original, first and sole inventor of the underreamer set forth, described, disclosed and claimed in letters patent of the United States, No. 827,595 granted and issued the 31st day of July, 1906; that said letters patent are good and valid in law, particularly as to claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19 thereof; that said invention was not known or used

by others before the said Elihu C. Wilson's invention or discovery thereof, or more than two (2) years prior to the application of said Elihu C. Wilson for said letters patent, nor patented nor described in any printed publication in the United States of America or any foreign country before the said Elihu C. Wilson's invention or discovery [76] thereof, or more than two (2) years prior to his application for said letters patent in the United States of America, nor in public use or on sale in the United States of America for more than two (2) years prior to said application of said Elihu C. Wilson for said letters patent, nor patented in any foreign country on an application filed more than twelve (12) months prior to filing of said application by said Elihu C. Wilson for said letters patent in the United States, and not abandoned; that said letters patent No. 827,595 were issued in due form of law and after due examination and procedure by the Commissioner of Patents as to the novelty and patentability and utility of said invention; that by the said letters patent there was granted and secured to the said Elihu C. Wilson, his heirs, legal representatives and assigns, for the term of seventeen (17) years from and after the 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the Territories thereof; that prior to the granting and issuance and delivery of said letters patent all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions; and that

the title to said letters patent is in the complainant, as alleged in the bill of complaint.

II.

That the invention set forth, described, disclosed and claimed in and by said Letters Patent No. 827,595 is of great value and has been extensively practiced by the complainant; that immediately after the production of said invention by said Elihu C. Wilson underreamers embodying and containing the said invention went into extended and general use and largely displaced all other underreamers or tools for the purposes for which such underreamers or tools are intended, and became, together with the underreamers [77] manufactured by the defendant herein, the underreamers in general use in the State of California and elsewhere in underreaming wells; that the trade and public and users of such underreamers and kindred tools have generally respected, acknowledged and acquiesced in the validity and scope of said letters patent, and the exclusive rights and title of complainant in, to and under said letters patent, and the validity and scope of said letters patent and the title of complainant thereto have been generally acknowledged, respected and acquiesced in by all manufacturers except the defendant herein and its predecessors in interest, and save and except for the wrongful and unlawful acts of the defendant herein in infringement of said letters patent, complainant would have been in the continued and exclusive enjoyment and possession of all the rights, liberties and privileges under, and all the right, title and interest in, to and under,

said letters patent, and the same would have been of great and incalculable benefit and advantage to complainant; that upon each and every one of said underreamers manufactured, used or sold by or for complainant since the date of the granting, issuance and delivery of said letters patent, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, have been plainly marked or stamped, thereby notifying the public of the said letters patent; that the defendant, long prior to the commencement of this suit and the filing of the bill of complaint herein, had full, complete and personal knowledge of, and had been notified in writing of, the granting and issuing of said Letters Patent No. 827,595, and of complainant's rights under said letters patent, and prior to the commencement of the wrongful and unlawful and infringing acts of defendant had full knowledge and notice of the grant, issuance and delivery of said letters patent to complainant, and of complainant's rights thereunder, and demand had been made upon defendant to respect the said letters [78] patent and not to infringe thereon, but that notwithstanding such notice the defendant has made, used, leased or sold or leased and sold, and has continued to make, use, lease or sell or lease and sell underreamers embodying the said invention of said letters patent No. 827,595.

III.

That the two suits Nos. A-4 and B-62 consolidated and joined and merged together to constitute this unitary cause of action were, upon order of the

Court, duly and properly consolidated, merged and joined together, whereby the pleadings, proofs, proceedings and offers in evidence of the parties in each of such suits became and are the pleadings, evidence, proceedings and proofs of the parties in such consolidated suit or cause of action, whereby the defendant herein further was, as to any such pleadings, proceedings, evidence and proofs of infringement and wrong doing charged therein, charged with infringement of claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19 of the said letters patent No. 827,595.

IV.

That defendant has infringed upon said letters patent, and particularly upon claims 9 and 19 thereof, which are as follows:

9. An underreamer-body terminating in prongs forming a fork and provided with shoulders on the inner faces of the prongs which form cutter-ways and terminate in downwardly-projecting lugs, and cutters mounted between the prongs of said fork and having shoulders inside the fork and faces to bear on the projecting lugs.

19. An underreamer comprising a body terminating in two prongs, and cutters each having two shoulders and a bearing-face on the inner side of each of the two shoulders to engage said prongs, [79] by the manufacture and sale or lease, or sale and lease of the so-called "Double Improved" and "Type F Underreamers" like "Complainant's Exhibit Improved Double Reamer and Cutters" and Complainant's Exhibit Defendant's Reamer Type "D," and Complainant's Exhibit Reamer Type "E,"

and Complainant's Exhibit Reamer Type "F"; and that each of said Double underreamers or said underreamers like said complainant's exhibits embodies and contains and embraces the invention patented in and by said letters patent No. 827,595 and particularly embraced within each of said claims 9 and 19; that each of said Double underreamers or reamers like said mentioned complainant's exhibits is an infringement upon each of said claims 9 and 19 of said letters patent No. 827,595, but not upon the other or any other claims thereof; that each of said Double underreamers or underreamers like said complainant's exhibits was and were manufactured and sold or leased or sold and leased by defendant without the license or consent or permission and also against the will of complainant, and in infringement and violation of said letters patent No. 827,595 and of the exclusive rights and privileges and liberties thereby granted and secured to complainant.

V.

That defendant, its officers, directors, attorneys, agents, servants, workmen, employees and assistants, and each and every of them, be perpetually enjoined and restrained from manufacturing or causing to be manufactured, using or causing to be used, leasing or causing to be leased, selling or causing to be sold, in any manner, either directly or indirectly, any underreamer or underreamers like or embodying the construction or inter-relation or formation of parts of either "Complainants Exhibit Improved Double Reamer and Cutters," or Complainant's Exhibit Defendant's Reamer Type "D," or Complain-

ant's Exhibit Reamer [80] Type "E," or Complainant's Exhibit Reamer Type "F"; and from manufacturing or causing to be manufactured, selling or causing to be sold, using or causing to be used, leasing or causing to be leased any part or parts or elements calculated and intended to be combined or used as a part or feature of any underreamer or device in infringement of said letters patent No. 827,595, that is of claims 9 and 19 thereof, in any manner whatsoever, or from manufacturing or causing to be manufactured, using or causing to be used, selling or leasing or causing to be sold or leased, either directly or indirectly, any combination of parts or elements or features capable of being assembled together or used in infringement of said letters patent No. 827,595, that is of claims 9 and 19 thereof.

VI.

That complainant recover of the defendant the profits, gains and advantages which said defendant has derived, received, realized or made by reason of said infringement by defendant; and that complainant recover of said defendant any and all damages which complainant has sustained or shall sustain by reason of said infringement by defendant.

VII.

And it is hereby referred to Lynn Helm, Esq., as Special Master of this court, who is appointed *pro hac vice* to take and state the account of said gains, profits and advantages and to assess such damages, and to report thereon with all convenient speed, and the said Union Tool Company, its officers, directors,

attorneys, agents, servants, employees, workmen and assistants, and each of them, is and are hereby directed and required to attend before said Special Master from time to time as he may require, and to produce before him such books, papers, vouchers, documents, records or other things, and to submit to such oral examination, as the Special Master may require. [81]

VIII.

That complainant do have and recover judgment against defendant Union Tool Company for the sum of \$631.64, being eighty (80%) per cent of complainant's otherwise full costs and disbursements herein, minus forty dollars (\$40); and that the further questions of increase of damages be reserved until the coming in of the Special Master's report.

Dated September 8, 1916.

EDWARD E. CUSHMAN,
District Judge.

Decree entered and recorded, Sept. 8, 1916.

WM. M. VAN DYKE,
Clerk.

By T. F. Green,
Deputy.

[Endorsed]: In Equity—Nos. A-4-B-62 Consol. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Interlocutory Decree. Filed Sep. 8, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [82]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Proceedings Had Tuesday, March 27, 1914.

Proofs taken for final hearing before I. Benjamin,
Notary Public, commencing on Tuesday, March 27th,
1914, at Los Angeles, California. [83]

*In the United States District Court, Southern Dis-
trict of California, Southern Division.*

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Depositions.

Testimony taken and proceedings had on behalf
of complainant pursuant to stipulations and notice
at the office of Raymond Ives Blakeslee, Esq., solici-
tor and counsel for complainant, at room 730 Cali-
fornia Building, Second Street and South Broad-
way, Los Angeles, California, commencing at the

hour of ten o'clock A. M., March 24, 1914, before I. Benjamin, Notary Public.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor and Counsel for Complainant.
FREDERICK S. LYON, Esq., Solicitor
and Counsel for Defendant.

It was stipulated as follows: That the reading over and signing of the depositions by the witnesses is waived; that all exhibits offered may be kept in the custody of counsel for the party offering the same until testimony is taken by the opposing party, whereupon such exhibits are to be delivered into the custody of counsel for said latter party, if requested, all exhibits to be opened to the inspection of counsel for either party at any time during ordinary business hours, and all exhibits offered to be returned to the clerk of the court upon the completion of all the proofs in the case. The record taken in the case, and all parts thereof, is to be returned to the clerk of the [84] court upon joint request of counsel for both parties. Printed copies of United States patents may be offered in evidence as furnished by the United States Patent Office, with full force and effect as if certified, subject to correction upon comparison with the records of the Patent Office. And, correspondingly, the filing dates appearing upon any such copies of United States letters patent, shall be considered as proof of the respective filing dates, subject to correction, if necessary, by the production of certified record pertinent thereto. An original and two carbon copies of the entire record in this case shall be produced, the original copy to be

returned to the clerk of the court, and the other two copies to be furnished respectively to counsel for the respective parties, the cost of taking and returning the entire record, including all said copies, to be taxed against the losing party.

It is further stipulated and agreed that any and all depositions may be taken stenographically, subject, however, to the demand of counsel for the respective party of the transcript of the direct examination of any given witness before being required to cross-examine said witness, such demand to be made at the completion of the direct examination. This is to apply only to the testimony taken in the city of Los Angeles and to expert testimony taken anywhere.

Deposition of Elihu C. Wilson, on His Own Behalf.

ELIHU C. WILSON, the complainant, appearing as a witness on his own behalf and being duly sworn, testified as follows:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 1. Please state your full name, age, place of residence and occupation.

A. Elihu Clemens Wilson; age, forty-three years; [85] residence, 734 Berendo Street, Los Angeles; occupation, manufacturer of oil-well machinery and president of the Wilson-Willard Manufacturing Company.

Q. 2. Can you state of your own knowledge who is the present owner of United States letters patent Number 827,595, issued July 31, 1906, to Elihu C.

(Deposition of Elihu C. Wilson.)

Wilson, then of Bakersfield, California, for under-reamers?

Mr. LYON.—Objected to on the ground it is incompetent and not the best evidence, and not the proper method of proof, and calling for the conclusion of the witness and not for a statement of fact.

A. I am the owner of it.

Q. 3. (By Mr. BLAKESLEE.) Can you produce the original letters patent referred to? A. I can.

Q. 4. Has anybody else, to your knowledge, been the owner of any part of the right, title and interest in and to and under said letters patent No. 827,595 at any time subsequent to the issue thereof?

Mr. LYON.—Objected to on the ground that it is leading and upon the ground stated in the objection to the preceding question.

A. No, sir; I am the sole owner.

Q. 5. (By Mr. BLAKESLEE.) Prior to the commencement of the present suit did you take any measure to notify the defendant Union Tool Company of the issuance of said letters patent No. 827,595 and making charge of infringement by said defendant of said letters patent?

Mr. LYON.—Objected to as leading and calling for the conclusion of the witness and not for a statement of fact. And if it has reference to any written instrument, the written instrument is the best evidence. [86]

Mr. BLAKESLEE.—We are laying the foundation for the production of any such written instrument, if any there may be. A. Yes, sir.

(Deposition of Elihu C. Wilson.)

Q. 6. Please state what steps you took of this nature.

A. According to my recollection a letter was forwarded to the Union Tool Company calling their attention to the fact that they were infringing my patent No. 827,595.

Q. 7. Do you know what if any letter was sent of that sort?

A. I will now produce a copy of the letter dated February 3, 1913, and addressed to the Union Tool Company, the defendant, Palmetto and Mateo Streets, in this city, and which was forwarded by my attorney at my request and signed by him. Attached to this letter are records of the postoffice which are the receipt for the delivery of the letter as it was sent by registered mail.

Mr. BLAKESLEE.—We offer in evidence on behalf of complainant the copy of the letter just discussed by the witness with the attached two receipts pertinent to its delivery, as “Complainant’s exhibit, copy of letter of notice to defendant,” and I will ask defendant’s counsel if he will admit the receipt of the original of this letter on or about the 4th day of February, 1913, by the defendant?

Mr. LYON.—The answer of the defendant admits that on or about February 3, 1913, the defendant received said notice, and the offer is therefore objected to as unnecessarily incumbering the record. There is no issue upon this question.

Mr. BLAKESLEE.—This copy of the letter is offered to make the record show the full contents of

(Deposition of Elihu C. Wilson.)

the letter, inasmuch as the answer only briefly refers to the receipt of notice of the patent. [87]

(The said document so offered in evidence is marked by the notary complainant's exhibit copy of letter of notice to the defendant, together with the title of the court and cause and the date on which the said document was offered.)

Mr. BLAKESLEE.—We offer also in evidence original letters patent of the United States No. 827,595, issued July 31, 1906, to Elihu C. Wilson for underreamers, as Complainant's Exhibit Wilson Patent.

(The said letters patent so offered in evidence are marked "Complainant's Exhibit Wilson Patent," together with the title of the court and cause and the date upon which the said letters patent were offered in evidence.)

Mr. BLAKESLEE.—In connection with the latter offer, we give notice that under the stipulation we will substitute for the original letters patent a copy furnished by the United States Patent Office, such copy not being at the present moment available.

Mr. BLAKESLEE.—The complainant further offers in evidence a certified copy of the "File Wrapper and Contents" of the said Wilson patent, No. 827,595, as "Complainant's Exhibit Wilson File Wrapper and Contents."

(Said "File Wrapper and Contents" are marked "Complainant's Exhibit Wilson File Wrapper and Contents," together with the title of the court and cause and the date upon which the said "File Wrap-

(Deposition of Elihu C. Wilson.)
per and Contents'' were offered.)

Q. 8. (By Mr. BLAKESLEE.) Prior to the date of Complainant's Exhibit "Letter of Notice" did you give notice directly or indirectly in any manner to the defendant of the Wilson patent in suit?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact. A. Yes, sir. [88]

Q. 9. (By Mr. BLAKESLEE.) In what way?

Mr. LYON.—The same objection and upon the further ground that it is assuming facts not shown by the testimony of the witness.

A. In the publication of my descriptive circular of the Wilson underreamer I set forth the features of the underreamer which were covered by my patents, and that circular was sent broadcast throughout the oil-well fields and, furthermore, the features of the Wilson underreamer patent were disclosed to Mr. Lyon, the attorney for the defendant.

Q. 10. (By Mr. BLAKESLEE.) When did you make such disclosure to Mr. Lyon?

A. On at least one occasion that I can recollect of when I visited him in his offices on Broadway, and which must have been in 1908-9—I think probably in 1908. I then showed him the patent that had been issued to me, and on other occasions my patent was discussed by Mr. Lyon and myself.

Q. 11. And what did you show Mr. Lyon at this time you have mentioned?

A. I showed Mr. Lyon the patent, Complainant's Exhibit Wilson Patent, and I also showed Mr. Lyon

(Deposition of Elihu C. Wilson.)

the principles of my invention and the features of them as I was manufacturing the underreamer, but prior to the time that I had applied for the patent I called his attention to the improvements embodied in the Wilson underreamer invention.

Q. 12. What was the time of this occurrence last referred to?

A. That was on an occasion in which Mr. Lyon was in Bakersfield, and, to the best of my recollection, was in the fall of 1905.

Q. 13. Do you remember what Mr. Lyon was doing in Bakersfield at that time [89]

A. Mr. Lyon was acting as counsel for Mr. John Brinkman, who was then defendant in a suit which had been brought by the Hardison Perforating Company. I believe they called it.

Q. 14. You have referred to the manufacture by you of these reamers. What reamers do you refer to?

A. The Wilson underreamer disclosed by the patent, Complainant's Exhibit Wilson Patent.

Q. 15. When did you commence such manufacture?

A. The first Wilson underreamer shown by that disclosure was made by the Baker Iron Works of Los Angeles on my order, I think in January or February of the year 1904.

Q. 16. And what have you to say as to the continuation of such manufacture since that time?

A. I have been manufacturing them, you may say, almost continuously ever since that. As soon as I

(Deposition of Elihu C. Wilson.)

could create a market for them orders were taken and reamers manufactured and sold to oil well companies and supply-houses.

Q. 17. Did the underreamers so manufactured by you bear any stamp, imprint or other marking, referring to the Complainant's Exhibit Wilson Patent.

Mr. LYON.—Objected to as leading and incompetent and calling for a conclusion of the witness, and not for a statement of fact.

A. Yes, sir. The underreamers are marked "Wilson underreamers," and as soon as the applicaiton for the patent was filed the underreamers were marked and stamped permanently on the body of the underreamer "Patents applied for," and after the issue of the patent in 1906 all reamers after that date were stamped and marked "Patented" and showing the date of the issue of the patent.

Q. 18. (By Mr. BLAKESLEE.) Can you produce at this time any such underreamer manufactured by you? [90] A. Yes, sir, I can.

(Witness produces underreamer on the floor of this room and which he designates by touching it.)

Q. 19. (By Mr. BLAKESLEE.) Will you please read off to us any imprint upon this reamer such as you have referred to, relating to the pendency of the patent application or the issuance of the patent.

A. I find stamped on the collar of the reamer body the words "Wilson patent, July 31, 1906" and the number of this underreamer is stamped "601."

(Deposition of Elihu C. Wilson.)

Q. 20. Can you state approximately the date of the first underreamer manufactured and sold by you bearing the marking which you have just read off, exclusive of the number of the reamer?

A. Probably in August of 1906.

Q. 21. Approximately, that is, in rough numbers, how many such underreamers have you manufactured and sold or caused to be manufactured and sold so marked?

Mr. LYON.—Objected to as leading and assuming facts not testified to by the witness.

A. Probably seven or eight hundred of them.

Mr. BLAKESLEE.—Attention is called to the fact that the witness testified that after the issuance of the patent he marked his reamers with the date of the patent, and the last question is based on that testimony.

Mr. LYON.—The record of the testimony speaks for itself.

Q. 22. (By Mr. BLAKESLEE.) In what leading old well fields were such underreamers, so marked, sold subsequent to the issuance of the Wilson patent?

A. The various oil fields of California, such as the Coalinga oil fields, the McKittrick field, the Midway field or [91] Taft field, Sunset and Maricopa fields, the Kern River field, the Santa Maria fields, the Santa Paula and Ventura fields, the Newhall fields, the Salt Lake old fields, the Whittier fields, the Fullerton fields, the La Habra fields, the fields in operation at San Diego and Newport, besides the

(Deposition of Elihu C. Wilson.)

Canadian oil fields, fields in Alaska, fields in Mexico, in India, Arabia, South America, fields in Illinois, and for water well use in Dakota.

Q. 23. In what State or States, excepting where you have mentioned the same, and, of course, excepting where you have mentioned the country, are or were the fields located which you have mentioned in your last answer?

A. The fields in the United States.

Q. 24. And in what State or States excepting where you have given the State?

A. The State of California.

Q. 25. Aside from such acts of manufacture, sale, use or leasing as you have charged the defendant Union Tool Company with, as infringement of Complainant's Exhibit Wilson Patent, in the bill of complaint in this suit, what, if any, underreamers have been made like the underreamers which you have testified you have made and sold as embodying the features covered by Complainant's Exhibit Wilson Patent, other than those made and sold by or for yourself, and by whom, if you know.

A. None other that I know of.

Mr. BLAKESLEE.—The Complainant offers in evidence the underreamer produced by the witness as "Complainant's Exhibit Wilson Underreamer."

Mr. LYON.—If the said underreamer is offered in evidence as an exemplification of the construction and interrelation of parts shown in the drawings or described in the specifications of Complainant's Exhibit Wilson Patent, the same is objected to as not

(Deposition of Elihu C. Wilson.)

corresponding thereto, and not in fact being an embodiment thereof. [92]

Mr. BLAKESLEE.—As to this objection, comparison will be the test, and the offer is made upon the testimony just given by the witness.

(The said underreamer is marked “Complainant’s Exhibit Wilson Underreamer,” together with the title of the court and cause and the date upon which the same was offered in evidence.)

Q. 26. (By Mr. BLAKESLEE.) Can you state approximately when Complainant’s Exhibit Wilson Underreamer was made?

A. Some time during the year 1912, I believe.

Q. 27. Where was it made? That is, at what manufactory?

A. Made in the plant of the Wilson & Willard Manufacturing Company near the corner of Fifteenth and Santa Fe avenue in this city.

Q. 28. Can you state of your own knowledge whether it has ever been actually used?

A. Yes, sir; the reamer has been used.

Q. 29. Do you know where or by whom?

A. No, sir; I do not, without looking up the records.

Q. 30. Please now refer to Complainant’s Exhibit Wilson Patent and briefly state the construction, inter-relation and mode of operation of the underreamer disclosed therein, and then in the same answer specify any difference in these respects which may exist as pertinent to Complainant’s Exhibit Wilson Reamer, so that we may know in what par-

(Deposition of Elihu C. Wilson.)

ticulars, if any, said reamer departs from the disclosure of the Complainant's Exhibit Wilson Patent.

A. The Wilson underreamer as disclosed in Complainant's Exhibit Wilson Patent consists mainly in a body of a single piece of two cutters, of a tee or mandrel to which the cutters are suspended in the reamer body, of a spring by which the cutters and tee are actuated, by a block which forms a seat for the spring, by two pins by which the block is held in position in the reamer [93] body, by a safety bolt 11, which bolt extends across the mouth of the reamer body, spanning from one prong to the other. The Wilson underreamer, Complainant's Exhibit Wilson Underreamer, embodies the same features exactly with the exception that a different form of a tee or mandrel is used, and that instead of using the block and dowel-pins to act in the seat of the spring and retaining means therefor, this exhibit uses a key which is a single piece extending through a slot in the reamer body and through the slot in the tee or mandrel, and on which key this spring rests.

Q. 31. Please state briefly the mode of operation of the underreamer disclosed in Complainant's Exhibit Wilson Patent, and, likewise, embodies in Complainant's Exhibit Wilson Reamer.

A. As I understand your question, you want me to state the method by which the reamer is put in operation?

Q. 32. The method in which it is put in operation and the action of the parts in the use of the reamer.

A. The underreamer when in use, of course, has

(Deposition of Elihu C. Wilson.)

its various parts assembled in the reamer body; and, in order to use the reamer, it is attached to the usual string of tools; and the cutters are pulled downward until they collapse over the ends of the spreading-bearings of the reamer body, and the cutters are then held in collapsed position, usually by a U-shaped clamp. The reamer is then inserted into the upper end of the string of casing, which casing is, of course, in position in the hole being drilled. It is then let down into the well inside of the casing, the same, of course, being attached to the string of tools, and suspended on the drilling cable. When the reamer emerges at the lower end of the casing, the tension of the spring draws the cutters 4 upwardly over the spreading-bearings of the reamer body, which bearings are downward-tapering projections on the end of the prongs of the reamer body. The cutters then rest [94] on the spreading bearings, having corresponding bearings 4³ on them to coact with spreading-bearings 9 on the reamer body. The expansion of the cutters is primarily caused by the upper corners of the shoulders 4³ of the cutters riding up on the tapered bearings 17 of the reamer body, and the expansion is completed by the cutters drawing up into position and resting upon bearings 9 of the reamer body. The reamer then performs its work by the vertical stroke of the reamer attached to the string of tools and, in turn, attached to the cable, and which is all operated by the motion of the walking-beam of the well rig. To remove the underreamer the tools are withdrawn into the casing by swinging them up on

(Deposition of Elihu C. Wilson.)

the cable by the use of the drilling engine, and the

I. B. shoulders

~~shells~~ 30 of the cutters strike against the

bottom of the casing or the casing-shoe, drawing them downwardly, or, rather, holding them stationary for a moment while the rest of the reamer is drawn upwardly until the spreading-bearings of the reamer body are withdrawn from between the bearings on the cutters 43, and the cutters can then close together sufficiently to permit them to enter the casing, and the tools together with the reamer are then withdrawn at the top of the casing.

Q. 33. Is there any distinction to be drawn between the mode of operation and method of use of the reamer disclosed by Complainant's Exhibit Wilson Patent and the mode of operation and the method of use of Complainant's Exhibit Wilson Reamer?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact.

A. So far as its actual use in the hole, and so far as the methods of setting the reamer preparatory to running in the casing, or its withdrawal from the casing, there is no difference. There is a difference as I previously stated, in the manner of suspending the cutters, spring and tee in the reamer body.

Q. 34. (By Mr. BLAKESLEE.) Please now describe a little more minutely the construction of the cutters 4 of Complainant's [95] Exhibit Wilson Patent, and the location of the surfaces 4³ upon said cutters?

(Deposition of Elihu C. Wilson.)

A. The Wilson underreamer-cutter as disclosed in Complainant's Exhibit Wilson Patent consists essentially of a shank having dovetail shoulders on opposite sides of the shank, which shoulders coact within retaining means of the reamer body, and the body proper of the cutter, which body extends downwardly and is a continuation of the shank, and the lower end of which performs the cutting or reaming and constitutes the cutting edge of the cutter. The body of the Wilson underreamer-cutter is so constructed that it extends laterally at right angles to a vertical line with the shanks of the cutters forming shoulders or projections beyond the sides of the shank. These shoulders are provided with bearing faces designated 4³ in the patent. These bearing faces being on the back of the shoulders of the cutter body. By these extended shoulders or projections beyond the sides of the shank of the cutter the cutting surface or main cutting end of the cutter itself is widened and the bearings on the cutters are so placed as to brace it to the very best advantage.

Q. 35. And with what parts do these bearing faces co-operate in the expansion and contraction of the cutters?

A. These bearing faces on the back of the cutters, which bearing faces are designated 4³, coact

I. B.

on

with the spreading-bearings ~~and~~ the reamer body itself when the cutters are being expanded and also in reaming position, such spreading-bearings being designated in the Wilson patent as 9 and 17.

(Deposition of Elihu C. Wilson.)

Q. 36. Upon what part or parts of the reamer body are such spreading-bearings 9 or 17 formed or provided?

A. On the projections or lugs which form the lower extremities of the prongs of the reamer body, the prongs being designated as 2.

Q. 37. Now, as to the portions of the bodies of the cutters lying between the bearing-faces 4³, please state how [96] they are positioned with respect to any part of the reamer body in the expanding and contracting or collapsing action?

A. There is no part of the Wilson reamer body which comes in contact with that portion of the Wilson underreamer-cutter.

Q. 38. And what is the arrangement of these bearing-surfaces 4³ with respect to the median or central portion of the cutter including the shank?

A. They are on opposite sides of the shank and project beyond the shank and downwardly below the end of the shank.

Q. 39. When the bearing faces 4³ are in engagement with the spreading bearings 9, is there any part of the reamer body or the prongs 2 thereof which confines the cutters or working ends thereof beneath the shanks and at the side of said working ends?

Mr. LYON.—Objected to as leading.

A. I don't know what you mean by the word "confines."

Q. 40. (By Mr. BLAKESLEE.) By "confines" I mean shuts them in or incloses them. That is, the working ends at the sides thereof.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—The same objection.

A. No, sir; there is not.

Q. 41. (By Mr. BLAKESLEE.) Please state a little more fully the results obtained by providing the broadened working ends of the cutters which are so broadened to provide the shoulders at the sides thereof, and having the bearing-faces 4³.

A. The chief advantage is the increased cutting surface given the cutters by such a change. The underreamer, of course, cuts or reams the hole, enlarging it to a greater diameter than was produced by the usual drilling bit, which in practice is run before the underreamer is put in use. It is natural that the greater cutting surface we have, or, in other words, the broader [97] the cutters are the more of the circumference of this hole they ream or enlarge at each stroke of the tools. The reamers which had been in use and which were in use when the Wilson underreamer was first put on the market had much narrower cutters than were provided on the Wilson reamer, and the increased width of the cutters proved to be a great advantage in reaming the hole better and faster than had been accomplished by the other reamers. Also, another great advantage in this widening of the bodies of the cutters is the bracing action obtained by extending the bearings laterally, which better enables the cutter to withstand the rotating action in the reamer body. By "rotating action" I mean the tendency to revolve on the vertical axis while the cutters are in reaming position. It would be quite clear that by projecting these bear-

(Deposition of Elihu C. Wilson.)

ings as far away from the axis as possible, the rotating strain is better resisted.

Q. 42. And what co-operates with the broadened working ends of the cutters to oppose this tendency to rotate?

A. The downwardly projecting lugs or spreading means 2'.

Q. 43. My question related to the working ends of the cutters irrespective of the shank portions, and I will ask you to state what part or parts co-operate with those working ends, that is, the broadened working ends, to prevent this rotary motion?

A. The spreading-bearings on the reamer body.

Q. 44. Numbered what in the Wilson patent?

A. Number 9 and number 17.

Q. 45. Now, going back a moment to your previous testimony wherein you referred to the sending out of trade circulars descriptive of the underreamers manufactured by you, when did you first send out such circulars?

A. I don't remember the exact date. Probably during the year 1908-9. [98]

Q. 46. Can you produce one of those circulars at this time?

A. No, sir; I cannot, but I have them at the shop.

Q. 47. I will ask you, if possible, to produce one of those circulars at the afternoon session to-day.

(An adjournment is now taken by consent until 2 o'clock P. M. of this day at the same place.)

(Deposition of Elihu C. Wilson.)

Los Angeles, Cal., March 24, 1914,
2 o'clock P. M.

This being the time and place to which the further taking of depositions in this matter was continued, Elihu C. Wilson is recalled and his direct examination resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Direct Examination (Resumed).

By Mr. BLAKESLEE.—The witness produces a booklet or circular. I note certain data written over or upon the face of this book.

Q. 48. Can you state what the significance of that data is and when it was put on?

A. I guess that was put on to-day.

Q. 49. And what does it mean?

A. I told my clerk, Miss Dauphine, to give me the date of the invoice covering these circulars, and this is the date that she gave us over the 'phone, and I see she has written it on this circular. This other notation must cover the issue of that second catalog.

Q. 50. That is, the second date?

A. Yes, sir; there is a date here December 19, 1911.
[99]

Q. 51. When, with reference to the first or earlier date, did you first distribute these hand-books?

A. Just as soon as we got them in our possession, which was unquestionably about July 7, 1909.

(Deposition of Elihu C. Wilson.)

Q. 52. How extensively were these distributed by you?

A. There were several thousand of them sent out. I do not know. I suppose we ordered these in five thousand lots, if I recollect right.

Q. 53. And in what particular localities?

A. They were mailed to all the oil companies in California, at least all those that we could obtain the addresses of, and I suppose we sent them to practically all the companies and to the supply houses throughout the State of California, and we sent them broadcast through the eastern oil fields in the eastern part of the United States, and also to many of the companies operating in foreign fields.

Q. 54. And these were sent out, I take it, under your supervision? A. They were.

Q. 55. I believe you have not definitely stated the relation, if any, of yourself to Elihu C. Wilson, the patentee of Complainant's Exhibit Wilson Patent.

A. I am the same party.

Mr. BLAKESLEE.—Complainant offers in evidence the hand-book just discussed by the witness as "Complainant's Exhibit Wilson Underreamer Hand-book."

Mr. LYON.—Objected to as incompetent, irrelevant and immaterial to the issues of this suit.

(The said hand-book so offered in evidence is marked "Complainant's Exhibit Wilson Underreamer Hand-book," together with the title of the court and cause and the date upon which the said hand-book was offered in evidence.) [100]

(Deposition of Elihu C. Wilson.)

Q. 56. (By Mr. BLAKESLEE.) In the use of the Wilson underreamer (and hereafter when I refer to the Wilson underreamer I mean the underreamer constructed substantially in accordance with the disclosure of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer, unless I specially differentiate between the same as to the one minor feature of difference which you have pointed out) please state what the particular stresses are to which the cutters are subjected in the reaming operations, and define those stresses by the directions of application or effectiveness.

A. The cutters of the Wilson underreamer when the reamer is in actual use reaming the hole, are subjected to several strains. The first is probably the I. B. impact

upward strain which is caused by the ~~intact~~ impact of the tools on the bottom of the hole or on the rim of the hole on which the cutters are being driven. This thrust is taken up at the extreme upper end of the shank of the cutters and applies to the bearing point on the reamer body which coacts with the upper end of the shank of the cutters. The second strain is the one caused by the tendency to drive the two cutters toward each other. The tendency in reaming in the hole is largely to crush the cutters toward each other as though the strain would tend to collapse them together. This strain is taken by the bearings on the extended shoulder of the cutter body 4³. This strain is borne by the spreading-bearings 9 on the reamer body, which bearings coact with

(Deposition of Elihu C. Wilson.)

bearings 4³ on the backs of the shoulders of the cutters. The third strain is an outward strain which sometimes occurs in reaming and which is a tendency to spread the cutters apart or force them outwardly from their reaming position. That strain is taken up by the dovetails on the shanks of the cutters 4² and which in turn is transmitted to the dovetails 2" on the body. This outward strain is also borne by the dovetails on the reamer body, said dovetails being on the inner faces of the two prongs, and are designated in complainant's [101] patent as 2". A fourth strain is the one which I have previously termed the rotating strain on the cutter, whereby the cutter tends to rotate axially and parallel with a line drawn vertically through the shank of the cutter and on an axis of the reamer body. This strain is partially resisted by the dovetails of the cutters 4² and the shoulders on the reamer body 2", but principally by the shoulders 4³ on the cutters and the bearings 9 of the reamer body.

Q. 57. Now, what if any relation exists between a relatively broader cutter body such as the one including the bearing-faces 4³ and the co-operation of the same with spreading-bearings such as 9 on the one hand, and the efficiency with which the inthrust of the cutters is opposed?

Mr. LYON.—Objected to as indefinite, uncertain and ambiguous as to what the intended comparison refers to.

A. I do not believe the question is clear to me.

Q. 58. (By Mr. BLAKESLEE.) I will ask you

(Deposition of Elihu C. Wilson.)

another question. Is my meaning clear to you?

A. It is not quite clear; no, sir.

Q. 59. Then I will withdraw the question and substitute as follows: As to the efficiency in opposing the intrust of the cutters which you have referred to, what have you to say as between a narrower cutter and a broader cutter such as the cutter of Complainant's Exhibit Wilson Patent, including the bearing-faces 4³?

A. The intrust or thrust which tends to collapse two cutters together in reaming is, of course, better resisted by the enlarged bearing which occurs on the backs or faces of the shoulders 4³ of the cutters.

Q. 60. In the Wilson Under-reamer over what portions of these bearing-faces 4³ do the co-operating surfaces of the spreading-bearings 9 extend? [102]

A. Over all of those two faces.

Q. 61. And what have you to say as to that provision or arrangement with respect to resisting both intrust and tendency to rotate, previously referred to, or either of the same?

Mr. LYON.—Objected to as leading and suggestive.

A. As I have previously stated, the greater amount of bearing surface we have there to resist that strain, the less the wear and the better the strain is resisted. And, furthermore, the further away from the center of rotation or axis of rotation of the cutter, the greater the leverage and the better the strain is resisted. Furthermore, in this form of cutter the strain is transferred from the dovetails almost en-

(Deposition of Elihu C. Wilson.)

tirely, you might say, to these projecting shoulders on the body of the cutters. This, of course, overcomes one of the greatest risks of breakage of dovetails on the cutters and reamer bodies. The position of these bearings are shown by the complainant's patent and transfers the bracing point or the spreading-bearing further down towards the cutting edge of the cutters, interposing the spreading means more directly between the points or cutting edges of the cutters where the inward strains are applied, producing a more positive means of maintaining the cutters in expanded position and, furthermore, it transfers the greatest strain on the cutter from the shank to the body portion of the cutter, which, being the heavier part of the cutter, is better able to resist that strain.

Q. 62. (By Mr. BLAKESLEE.) In the cutters of the Wilson underreamer what is the position of the outer lateral extremities or side portions of the body of the cutter with respect to the lines of extension of the dovetails on the shank of the cutter?

A. They project beyond the outside faces of the dovetail which are on the shanks of the cutters.

Q. 63. What have you to say with reference to the length of life of an underreamer-cutter, comparing a cutter such [103] as those of the Wilson underreamer, with a cutter the body of which is of lesser width? A. They will last longer.

Q. 64. And why?

A. In the first place, because the cutter has more material in it and can be dressed up to size more

(Deposition of Elihu C. Wilson.)

often. In other words, it requires a greater length of time to wear out the greater bulk of material in the wide cutter than it does the lesser bulk in the narrow cutter.

Q. 65. In the use of cutters of underreamers such as those of the Wilson underreamers, are the cutters discarded after they have once become dull?

A. They are not.

Q. 66. What is done when they become dull?

A. They are removed from the reamer body and heated to a high temperature in a forge and dressed out to size and resharpened, as we say, with a hammer, as such jobs are usually done, in a blacksmith fire or forge.

Q. 67. How, if in any manner, does the question of variation of width of cutter body effect this dressing out and sharpening operation?

A. The operation is practically the same, the difference being that with the wide cutter there is more material to dress out to size, and naturally, produces a longer life of the cutter.

Q. 68. Have you seen any other underreamers on the market than the Wilson underreamer?

A. I have.

Q. 69. Can you name a few of them, if there are more than one?

A. The reamer commonly known as the Double underreamer, of the Union reamer as it is sometimes known; the Swan underreamer; [104] the Austrian underreamer; and many other reamers which have been used.

(Deposition of Elihu C. Wilson.)

Q. 70. Can you produce a specimen of any of the underreamers which you have mentioned?

A. I can.

(The witness points out two underreamers lying upon the floor of this room.)

Q. 71. (By Mr. BLAKESLEE.) What are those underreamers known as respectively?

A. This reamer to the left is the portion of a reamer body of what is commonly known as the old style Double underreamer. The part of the body which is missing is merely the subjoint at the top which screws into the thread at the upper end of the reamer body or end opposite the mouth in which the cutters are placed.

Q. 72. Are the cutters which fit that underreamer before you? A. No, sir; they are not.

Q. 73. Have you any cutters before you which can be applied to that reamer and which might constitute a part of a Double underreamer as known?

A. We have here a cutter of the same design but for a smaller size reamer.

Mr. BLAKESLEE.—We will call this reamer or the reamer body with the detached cutter the old style Double underreamer.

Q. 74. What is the other underreamer before you?

A. The other underreamer is the lower portion or main portion of the body of the Double improved underreamer.

Q. 75. Have you any cutter which belongs to or fits that body?

(Deposition of Elihu C. Wilson.)

A. We have. These two cutters here are Double underreamer-cutters to fit that body and known as the cutters for the improved Double underreamer.
[105]

Q. 76. Where did you obtain these two Double underreamers before you in their present condition? That is, the parts thereof which are here?

A. This Double improved underreamer with the cutters were obtained in the Salt Lake oil field, just west of Los Angeles.

Q. 77. And when? A. Four or five days ago.

Q. 78. And the other one?

A. And this body together with the old style of cutter—the old style underreamer body—was brought in from the Whittier fields.

Q. 79. And when?

A. I think that body was brought in only yesterday, and also the cutter.

Mr. BLAKESLEE.—I will ask defendant's counsel if he is willing to admit that these parts of the old style and improved Double underreamers just discussed are the products of defendant's manufacture?

Mr. LYON.—They bear the imprint of the Union Tool Company on the sides and have the general appearance of having been manufactured by the defendant company. I have no personal knowledge in regard to either of them, and if they are to be offered in evidence I will object to them on the ground they are not a complete exhibit of either of such underreamers. I have no doubt in my mind but what so

(Deposition of Elihu C. Wilson.)

far as they exist here before us they were manufactured and sold by the Union Tool Company, the defendant in this case, of the Union Oil Tool Company, its predecessor in interest.

Mr. BLAKESLEE.—But that may not satisfy the doubt in the Court's mind. I wish to know how much farther we are to be put on our proofs as to these products. And if counsel is not prepared to stipulate, we will have to go farther in that [106] direction. At this point I may state that complainant elects to stand upon Claims 16 and 17 of Complainant's Exhibit Wilson Patent, taken, of course, together with the drawings and specifications of said patent, and the other claims of the patent in so far as they are interpretative of the invention. But as to the question of claims separately and distinctly considered, we will stand upon claims 16 and 17 of said patent in this suit. For the purpose of this suit in view of the election just made, complainant does not consider that it is necessary to produce the further parts of the two Double underreamers just produced, believing that verbal testimony can be taken as to the mode of operation of the parts before us which will sufficiently point our charge of infringement. This statement may somewhat assist counsel in determining whether he is prepared to stipulate as proposed.

Mr. LYON.—The way I understand the claim of infringement is that it is limited to claims 16 and 17 and that it is conceded that defendant has not infringed any one of the claims 1 to 15 inclusive, or 18,

(Deposition of Elihu C. Wilson.)

19 and 20 of the Complainant's Exhibit Wilson Patent. Is that correct?

Mr. BLAKESLEE.—I don't think it is necessary to concede that there has been no infringement of other claims, but for the purposes of this suit I state that we will stand solely upon claims 16 and 17 taken together with the other parts of the patent, namely, the specifications and drawings and the other claims in so far as they are merely interpretative of the disclosure. I am dealing now purely with the issue of invention as reflected by said claims subject, of course, to such interpretations thereof as may be made.

Mr. LYON.—In the bill of complaint in this case the complainant has charged generally the infringement of Complainant's Exhibit Wilson Patent and at this time complainant evidently elects to abandon the charge of infringement of any of the [107] claims except 16 and 17.

Mr. BLAKESLEE.—That is correct, in so far as this suit is concerned, when we are dealing specifically with the claims.

Mr. LYON.—I have no desire to be captious in this case. So far as I can see at the present time, the body, so far as it is now before us, of the so-called "old style Double reamer," seems to be without change as manufactured by the Union Oil Tool Company, the predecessor in interest of the present defendant. The cutters of such reamer apparently have not been produced nor have the sub nor the spring-actuated rod or spring, so that it is impossi-

(Deposition of Elihu C. Wilson.)

ble to ascertain from such exhibit what the cutters were or what the mode of operation or inter relation of parts were. I am willing to admit that that body, so far as it stands, was made by the Union Oil Company, predecessor in interest of the present defendant, and was made at Los Angeles, California. And I will further state that from the date of the incorporation of the defendant company in about 1907-8 to the present time, the defendant company has manufactured in various sizes underreamers bodies substantially like this old styled body at Los Angeles, California, at Chicago, Illinois, and at Torrance, California. But I call counsel's attention to the fact that claims 16 and 17 of the Wilson patent, in suit, are apparently and solely of an underreamer-cutter, which cutter is not produced in this exhibit, and which would seem to be a very material part to be produced.

Mr. BLAKESLEE.—Complainant offers in evidence the old style underreamer body as to which counsel has just stipulated as Complainant's Exhibit Old Style Double Underreamer Body.

Mr. LYON.—The offer is objected to as fragmentary, for the reasons stated in the stipulation, and, for this reason, the further objection is made that the exhibit is incompetent. [108]

(The said underreamer body so offered in evidence is marked "Complainant's Exhibit Old Style Double Underreamer Body," together with the title of the court and cause and the date upon which the same was offered in evidence.)

(Deposition of Elihu C. Wilson.)

Mr. LYON.—With reference to the cutter produced by the witness and which the witness has said was an old style Double underreamer-cutter of a smaller size than the cutter furnished for use in Complainant's Exhibit Old Style Double Underreamer Body, I am prepared to stipulate that the same was manufactured either by the said Union Oil Tool Company or the Union Tool Company, defendant herein, but I am not prepared to state for what particular underreamer, or, at the present time, the exact size of such underreamer, nor which particular style, although there seems to be a letter J on the inner face of the shank of the cutter which may hereafter serve to identify it. This cutter appears to have been practically worn out. I will produce, if complainant so desires, cutters of this style manufactured in Los Angeles County by either the Union Oil Tool Company or the Union Tool Company, the defendant herein, either prior or since the commencement of the suit as complainant may desire. If counsel for complainant will accompany me to the shop of the Union Tool Company at Torrance, he will be afforded an opportunity to select such of said exhibits as he may desire.

Mr. BLAKESLEE.—The complainant offers in evidence, without refusing the offer of counsel to furnish further similar cutters, the spare cutter just referred to in counsel's stipulation, as Complainant's Exhibit Old Style Double Reamer Cutter No. 1.

(The said cutter so offered in evidence is marked "Complainant's Exhibit Old Style Double Reamer

(Deposition of Elihu C. Wilson.)

Cutter No. 1," together with the title of the court and cause, and the date upon which the said cutter was offered in evidence.) [109]

Mr. LYON.—So far as the body itself is concerned of what the witness has produced here and termed "body of new style" or "improved style Double reamer," whichever term he used, and bearing on its face the number 2435, the same objection will be made to the offering of this in evidence that has been made with reference to the body of the so-called old style reamer, that it is fragmentary. It has the general appearance of the reamer manufactured by the Union Tool Company, and while worn and battered in some respects, it is undoubted that this original body was manufactured by the defendant in this case prior to the commencement of this suit, and we will concede that this body in its original form was manufactured by the defendant in Los Angeles County, California, and sold by it prior to the commencement of this suit.

With respect to the cutters, whether said cutters belong to this particular body or not, I am unable to state. But, in a general way, they correspond to what would be sold with such underreamer and with the reservation that such a reamer out of our stock be selected by complainant or defendant to illustrate the exact structure of a complete underreamer as manufactured and sold by the defendant, I have no objection to this body and cutters except that without its sub and spring-actuated rod, etc., it is not a complete exhibit of the underreamer. And the fur-

(Deposition of Elihu C. Wilson.)

ther reservation that the cutters have evidently been redressed a number of times and may perhaps be very much worn on their various faces and parts. The further reservation that it is apparent that these cutters here produced are not a pare of cutters, although they may be cutters made at different times for the same size of body. I am willing to permit you to use these as cutters manufactured and sold by the defendant prior to the commencement of this suit, if you so wish, with the reservation that if I find such is not the fact I reserve the right to prove that these cutters were not made by us in Los Angeles [110] County, at the same time, to offer cutters which were made by us in their place and of the same general type.

Mr. BLAKESLEE.—The Complainant offers in evidence the body and cutters of the improved type of Double underreamer just covered by counsel's remarks and stipulation, as Complainant's Exhibit Improved Double Reamer and Cutters.

Mr. LYON.—The same objection is made to this offer that was made to the offer of Complainant's Exhibit Old Style Double Underreamer Body in evidence.

(The said body and cutters so offered in evidence are marked "Complainant's Exhibit Improved Double Reamer and Cutters," together with the title of the court and cause and the date upon which the same were offered in evidence.)

Q. 80. (By Mr. BLAKESLEE.) When did you first see a Double underreamer having a body like

(Deposition of Elihu C. Wilson.)

that of Complainant's Exhibit Old Style Double Reamer Body?

A. It was probably very near 1903, or it may have been as early as 1902.

Q. 81. When did you first see a Double underreamer with a body and cutters like that of complainant's Exhibit Improved Double Underreamer Body and Cutters?

A. I think it was during the year 1905. Probably 1905.

Q. 82. Since the time last mentioned, have you kept in touch with the underreamer products of the defendant, Union Tool Company, and its predecessor, as found in the market?

A. To a certain extent, yes, sir.

Q. 83. What have you to say as to the relative numbers of underreamers, the products of these companies, which you have seen since 1906, that is, the relation between the number of old-style Double underreamers and the improved Double underreamers?

A. The improved Double underreamer has almost entirely superseded the old style. [111]

Q. 84. And can you say of your own knowledge what has been the preference in the oil fields, if there has been any, since the year 1906, as between the old style and the improved Double underreamer?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness, incompetent, no foundation laid, and the witness is not qualified to answer the question.

(Deposition of Elihu C. Wilson.)

Q. 85. (By Mr. BLAKESLEE.) I will withdraw that question. Since the year 1906, have you kept in touch with the art of underreaming in the fields of California? A. Yes, sir.

Q. 86. To what extent?

A. To a very considerable extent. It has been my business to know what the trade demanded and whether it was being supplied.

Q. 87. Have you made any trips to the various fields in California during that period of time?

A. Yes, sir; many of them.

Q. 88. To what fields, for instance, and when?

A. The Coalinga fields repeatedly, Taft or Midway fields, the McKettrick field, the Sunset fields, the Kern River field, the fields between Coalinga and McKettrick, or the Devil's Den country, as it is usually known, the Salt Lake fields of Los Angeles, the Santa Maria field, the Santa Paula field, the Newhall field, the Whittier field and the Fullerton field.

Q. 89. How recently have you made trips to any of these fields, and which?

A. I have been in the Salt Lake field in the last week or ten days.

Q. 90. Any time last winter and a year ago this last winter?

A. Yes, sir; I have been in the Salt Lake fields several times during the last year, and I have been in the Taft field [112] and the Sunset field and Maricopa fields, and one trip, especially, was made during the winter of 1912-13.

(Deposition of Elihu C. Wilson.)

Q. 91. What was your mission on that visit last mentioned?

A. For the purpose of obtaining evidence in the suit of the Union Tool Company vs. The Wilson & Willard Manufacturing Company.

Q. 92. Now pending in this court?

A. Now pending in this court.

Q. 93. And what was the subject of that litigation?

A. The Union Tool Company had sued the Wilson & Willard Manufacturing Company for alleged infringement of the Double underreamer patent by the Wilson & Willard Manufacturing Company.

Q. 94. Is that the same company you have referred to in this deposition?

A. It is the same company.

Q. 95. And what class of apparatus did you particularly inspect in those fields at that time?

A. We were inspecting underreamers particularly.

Q. 96. And where was this?

A. That was in the Midway fields and in the Sunset and Maricopa fields.

Q. 97. And what did you find or which type of Double underreamer did you find to be in particular use in those fields?

A. The improved type or the new-style Double underreamer, as it is commonly known.

Q. 98. Now, you have testified that you turned out or had turned out the first Wilson underreamer in January or February, 1904. I wish you would state definitely whether prior to that time you ever

(Deposition of Elihu C. Wilson.)

had seen a Double underreamer of the improved type? A. I had not. [113]

Q. 99. Will you please now compare Complainant's Exhibit Old Style Double Reamer Cutter No. 1 with cutter Fig. 4, of Complainant's Exhibit Wilson Patent, and a cutter of Complainant's Exhibit Wilson Reamer?

A. You wish me to compare the old-style Double underreamer cutter No. 1 with cutter 4?

Q. 100. Yes. That is the number in the patent. And a cutter of Complainant's Exhibit Wilson Underreamer.

A. The old style Double underreamer cutter consisted essentially of a shank and dovetail shoulder on the sides of the shank of the cutter, and a body at the lower end of the shank, which body is virtually an extension or in a plane of the outer edges of the dovetails of the shank. In other words, practically the same width as the outer faces of the dovetail. The bearing face at the back of the cutter, which face rests against the spreading-bearing of the hollow slotted extension of the Double underreamer body, is so placed as to be at the back of the shank of the cutter, and no bearings extend on the back of the body of the cutter itself, as the back of the body of the cutter did not in any way contact with the reamer body itself. The Double underreamer cutter of the old-style type as shown by Complainant's Exhibit Old Style Double Reamer Cutter No. 1, differs from the cutters as revealed by complainant's patent in that the spreading bearings, or rather the bearings

(Deposition of Elihu C. Wilson.)

4³ of the Wilson underreamer-cutter, are a part of the cutter body and are integral with the cutter body and not a portion of the shank of the cutter, so to speak, whereas the corresponding bearings or the bearings of the Double underreamer-cutter, old style, which coact with the spreading-bearings in the old style Double underreamer body, were placed on the shank only of the cutter. The cutters shown in Complainant's Exhibit Wilson Underreamer are practically the same as those revealed by Complainant's [114] Exhibit Wilson underreamer patent, the bearing-faces being on the body or extended shoulders of the body instead of on the shanks of the cutter. The Double underreamer-cutter, old style, has a V-shaped groove planed across the shank of the cutter, which groove forms the upper boundary of the bearings just referred to in describing the old style Double underreamer-cutter. No such groove appears on the cutter of the Wilson underreamer, Complainant's Exhibit or Complainant's Patent.

Q. 101. Will you please now compare the cutters of Complainant's Exhibit Wilson Patent and of Complainant's Exhibit Wilson Underreamer with the cutters of Complainant's Exhibit Improved Double Reamer and Cutters?

A. The improved Double underreamer-cutter consists of a shank with dovetail shoulders on the back of the said shank, and the body of the cutter being partially an extension of the shank, and the said body having lateral extensions or projecting shoulders which extend at right angles to the shank

(Deposition of Elihu C. Wilson.)

and dovetails of the shank and project beyond the extreme outer faces of the dovetails. The improved Double underreamer-cutter has bearings on the inner faces of the shoulders of the body, which shoulders project at right angles to the shank and dovetails. This extended shoulder increases the width of the cutter body and the bearings at the back of the cutter which rests against the spreading-bearing of the Double underreamer body when the cutters

I. B. reaming

are expanded into ~~leaning~~-position and are extended across the entire back of the body of the cutter. In other words, the shoulders which project at right angles from the shank of the cutter and dovetails thereof have bearings on the inner faces of them, which bearing-faces coact with the spreading-bearing of the Double underreamer body. In this respect the improved Double underreamer-cutter differs from the old-style Double underreamer-cutter, and also in that respect the improved Double underreamer-cutter, is like the cutter of the Wilson underreamer.

[115]

Q. 102. Please compare the position or arrangement of the bearing-surfaces of the cutters of Complainant's Exhibit Double Improved Reamer and Cutters, with the position or arrangement of the bearing-surfaces of the cutter being Complainant's Exhibit Old Style Double Underreamer-cutter No. 1.

A. The old style Double Underreamer-cutter No. 1 was so constructed as to have all the bearing-face which coacts with the spreading-bearing of the

(Deposition of Elihu C. Wilson.)

Double underreamer body placed at the back of the shank and dovetail, and said bearing was in no respect a part of the body of the cutter, the bearing being above the body of the cutter. The corresponding bearing as shown by the improved Double underreamer-cutter was transferred further down the shank of the cutter and made to extend and to form the back of the extended shoulders of the cutter body.

Q. 103. Assuming that the cutters, Complainant's Exhibit Improved Double Underreamer and Cutters, were of a proper standard size to fit the body, being Complainant's Exhibit Old Style Double Reamer Body, would it be possible to apply such cutters to such body for use therewith?

Mr. LYON.—Objected to as leading.

A. No, sir; they would not fit the old-style body.

Q. 104. (By Mr. BLAKESLEE.) And why?

A. For the reason that the new style cutters having the bearing extended downward and forming the upper portion of the entire back of the cutter body, could not fit up into place in the old-style reamer body without removing the lower end of the dovetailed recesses in the old-style body to permit the extended shoulders ~~to permit~~ of the new-style

Double underreamer-cutter to ride up on to the spreading-bearing.

Q. 105. What provision is made, if any, to this end, in the body of Complainant's Exhibit Improved Double Reamer and Cutters? [116]

A. There is a V-shaped groove machined laterally across the end of the underreamer body, whereby the

(Deposition of Elihu C. Wilson.)

lower end of the dovetail recesses are removed, and which in turn forms a continuous bearing upon which the bearing at the back of the body of the cutters may rest. By these V-shaped grooves the parallel bearing faces of the hollow slotted extension of the reamer body are extended so as to accommodate the widened body of the improved Double underreamer cutter. Furthermore, the portion of the hollow slotted extension which projects downwardly below the upper corner of the V-shaped groove is thereby transformed into a projecting wedge or spreading-bearing, whereby the spreading surfaces of the improved Double underreamer body are extended downwardly until they are interposed between the bodies of the Double improved underreamer-cutters just as at the spreading-bearings Fig. 9 on the prongs of the Wilson underreamer body.

Q. 106. Please state what the co-operation of the cutters of Complainant's Exhibit Improved Double Underreamer and Cutters with the body of that exhibited will be with respect to the various stresses to which the cutters are subjected when the cutters are in expanded position and during the reaming operation?

A. The extended or broadened bearing-faces at the lower ends of the parallel bearing-faces of the improved Double underreamer body, projecting downwardly until they are interposed between the bodies of the two cutters, transfers the fulcrum or pivotal point to the backs of the bodies of the cutters. That pivotal point is the point at which the

(Deposition of Elihu C. Wilson.)

greatest stress is applied to the cutters in resisting

I. B. inward

the ~~underreamer~~ strain on the cutting edges of the cutters. The upward strain or the end-thrust is taken up at the upper ends of the dovetail ways which form the upper boundary of the hollow-slotted extension. The outward strains are taken up on the coacting dovetails of the underreamer cutters and the corresponding dovetails of the underreamer [117] body. The rotating strain applied to the cutters, which strain is caused by the principal force of the blow of the tools being applied at one side of the cutting edge of each of the cutters to a greater degree than happens to be applied to the opposite corner of the cutters, produces a rotating motion of the cutter within the dovetail, and which rotation is on an axis parallel to the axis of the reamer body. By the extended faces of the parallel bearing-faces of the Double underreamer body and the corresponding extensions of the cutter bodies forming shoulders which extend at right angles to the shank, this rotating strain is taken up on these shoulders at the backs of the cutters instead of on the dovetails only as was formerly done with the old style Double underreamer.

Q. 107. Now, what can you say as to the relative length of life and cutting efficiency or cutting range of the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, with respect to the cutter being Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

(Deposition of Elihu C. Wilson.)

A. I have previously explained that the improved Double underreamer-cutter having a wider body and a broader cutting surface naturally has more material in it which must be worn out before the cutter becomes useless, unless breakage should occur. The greater amount of material in the improved cutter is bound to prolong the life of the cutter to a greater degree than the narrow and small body of the old I. B. style Double underreamer cutter produced/in evidence/. In order to underream the whole sufficiently for the casting to follow, it was necessary for the underreamer-cutters to enlarge the entire circumference of the hole. It is apparent at once that the broader the cutters, or, in other words, the greater the extent of the cutting edges of the underreamer-cutters, the more of the circumference of the hole is reamed or cut at each stroke of the tools. The wider [118] cutter of course, reams the hole faster and, furthermore, reams the hole more completely than was accomplished by the old style narrow cutters of the Double underreamer.

(By consent an adjournment is taken until tomorrow, March 25, 1914, at 10 o'clock A. M., at this same place.)

Wednesday, March 25, 1914,
10 o'clock A. M.

This being the time and place to which the taking of proofs in this cause was continued, the proceedings are now resumed.

(Deposition of Elihu C. Wilson.)

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor for
Defendant.

Mr. BLAKESLEE.—Amplifying the notice for the taking of the testimony now in progress, which was originally given, it is to be noted that adjournments will be taken from time to time and from place to place as may be necessary to complete the proofs of complainant.

ELIHU C. WILSON, complainant herein, recalled as a witness in his own behalf.

Direct Examination (Resumed).

(By Mr. BLAKESLEE.)

Q. 108. With regard to the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, as to which you have testified that the bodies project beyond the sides or lines of extension of the sides of the shanks of the cutters forming bearing surfaces, will you please state definitely where the other bearing surfaces on the body of these cutters as to which you have testified are located?

Mr. LYON.—The question is objected to on the ground [119] that it is leading.

A. The other bearing surfaces lie between those bearings which are on the backs of the shoulders of the cutter body and form a continuation of the bearings that are on the backs of the shoulders of the cutters.

Q. 109. (By Mr. BLAKESLEE.) Please state a little more fully what the actions of these several

(Deposition of Elihu C. Wilson.)

bearing surfaces are and what relation there is between or among them as to the operative effect produced?

A. The bearings practically unite to form one function of the underreamer-cutter. With the exception of a groove planed in the back of the cutter and which groove is a vertical one and in line with the axis of the cutter, the bearings referred to are a single plane.

Q. 110. Does the provision of this bearing surface between two bearing surfaces on the shoulders of these cutters affect the action of the bearing surfaces on the shoulders with respect to their opposing the stresses you have testified about?

A. That is somewhat difficult to say. I should imagine that the groove which is planed vertically across this bearing surface referred to, may possibly better assist in transferring the strains which are resisted by the bearings on the shoulders of the cutters, which strains are applied during the rotating action or strain or are sometimes applied to the cutter as previously explained. By having this part of the bearing removed there is a possibility that it would avoid a rocking or tilting action of the bearing and make a more substantial rest on the spreading-bearing of the reamer body.

Q. 111. Aside from any effect that groove may have, does the provision of the bearing surfaces which lie between the surfaces in the shoulders of each of these cutters affect in [120] any way the action of these bearing surfaces on the shoulders?

(Deposition of Elihu C. Wilson.)

Mr. LYON.—The question is objected to on the ground that it is leading.

A. They carry a part of the same strain that is applied to the shoulders.

Q. 112. (By Mr. BLAKESLEE.) Now, assuming that the intermediate bearing surface, that is, the bearing surface between the bearing surfaces on the shoulders, were removed in these cutters, please state what would be the result with respect to the action of the surfaces on the shoulders?

A. It would throw all of the strain upon the shoulders and would cease to transfer a portion of the wear and a portion of the strain of the inward thrust of the cutters to the intermediate bearings referred to.

Q. 113. Would the resultant action of the bearing surfaces on the shoulders differ in nature or in degree or in both?

Mr. LYON.—The question is objected to on the ground that it is leading and suggestive.

A. It would not differ in nature; it would differ in degree possibly. The bearings at the back of the shoulders of the cutters would be obliged to take up all of the pressure due to the inward strain.

Q. 114. (By Mr. BLAKESLEE.) Taking these bearing surfaces on the shoulders of these Double cutters of this exhibit by themselves, and comparing them with the bearing surfaces on the shoulders of the cutters of Complainant's Exhibit Wilson Underreamer, please more particularly compare the actions of the same.

(Deposition of Elihu C. Wilson.)

A. Their function is practically the same. The inward thrust of the cutter when in reaming position is taken up by the spreading-bearing that is interposed between the cutters, and this spreading-bearing, of course, comes in contact with those bearings at the apex of the shoulders of the cutters in both the Wilson [121] cutter and in the Double underreamer-cutters of the improved type. There is a difference in the angularity of these shoulders, but, so far as taking up the inward thrust is concerned, and maintaining the cutters in expanded position with the spreading-bearings of the reamer body interposed between them, their functions are the same.

Q. 115. And how with respect to the resistance by these bearing surfaces of the inthrust stresses and the stresses tending to rotation of the cutters upon their longitudinal axes?

A. By the extension of the spreading-bearings of the back of the Double underreamer-cutter, I mean the change which was made in the improved Double underreamer-cutter over their old style cutter, whereby the body of the cutters were extended to from shoulders projecting at right angles to the shanks of the cutters. And by utilizing the backs of those shoulders as bearings to rest upon the spreading surfaces of the reamer body, the power to resist the rotating action of the cutters on their vertical axes was greatly increased. It gives an added leverage to the cutter to offset that rotation, and does more; it throws the principal part of this

(Deposition of Elihu C. Wilson.)

force or rotating strain upon these projecting shoulders with their bearings at their backs, instead of throwing the strain chiefly upon the dovetail shoulders of the shanks, as is the case with the old style Double underreamer-cutters. The Wilson underreamer-cutter had that same advantage over I.B. the old style/Double/underreamer-cutter, which made a stronger cutter than the old style Double underreamer-cutter, and, at the same time, made a wider or broader cutter, increasing the cutting area. The change which Double effected in devising the improved Double underreamer-cutter, now gives their improved Double underreamer-cutter practically the same advantage in that respect that we claim for the Wilson cutter. [122]

Q. 116. In the cutters of Complainant's Exhibit Wilson Underreamer, do you find any shoulder such as you have testified you find in the cutters of the Double underreamer at the back of the cutter or extending across the back of the cutter, which participates in the expanding action of the cutter?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. Yes, sir; I do. The Wilson Underreamer-cutters, as previously explained, have shoulders which extend at right angles to the shanks, the backs of which shoulders are provided with bearings, which bearings rest upon the coacting spreading-bearing or bearings of the reamer body.

Q. 117. (By Mr. BLAKESLEE.) Do you find any shoulder part on the cutters of Complainant's

(Deposition of Elihu C. Wilson.)

Exhibit Wilson Underreamer between the shoulders you have just referred to?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. No, sir; there are none.

Q. 118. (By Mr. BLAKESLEE.) Now, as to the groove which you have testified to finding in the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, such groove extending lengthwise of the cutter, and being produced through the bearing surfaces, what effect does that have upon the continuity of the bearing surfaces of these cutters?

A. It divides the otherwise single plane into two separate bearings.

Q. 119. Do you find any such groove in the bearing surfaces of the cutter, being Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

A. I do not.

Q. 120. Now, referring to both the old style and improved Double underreamers, as you are acquainted with the same [123] on the market and in the field, briefly state what means are employed for causing the expansion of the cutters in co-operation with the spreading surfaces?

Mr. LYON.—The question is objected to on the ground that it is immaterial in this action, inasmuch as complainant has elected to stand on Claims 16 and 17 of Complainant's Exhibit Wilson Patent, which said claims are specifically for an underreamer-cutter as an article of manufacture irrespec-

(Deposition of Elihu C. Wilson.)

tive of other parts of the underreamer. This objection will be understood as taken and repeated to all questions asked and answers given by this witness which refer to the parts of the reamer other than the cutters *per se*, and will also be understood as taken and repeated to each question asked and answer given by any other witness called on behalf of complainant in this case, without the necessity of hereafter repeating the objection in the record.

Mr. BLAKESLEE.—We object to counsel placing an arbitrary construction upon the specific claims which have been elected for the purpose of proving infringement in this case. And, if counsel insists, upon his objection to the determination of any other structural features of the Double reamers, we will ask him if he will at this time stipulate in the spirit of that objection that in the Double reamers of both old type and improved type means are provided and have at all times been provided for causing the expansion of the cutters in connection with the spreading surfaces when the reamers reached the zone of operation or work in the hole. If counsel will so stipulate we will not press that inquiry any farther.

Mr. LYON.—I am not trying this case on behalf of complainant. I stand upon the objection that in view of the election of complainant, so far as the question of infringement is concerned, the form and shape and construction of the cutters are the only things included within either claim 16 or claim 17 of the Wilson patent in suit. [124]

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The claims speak for themselves, taken in connection with the rest of the patent in suit. And we will now ask the witness to answer the last question.

A. The cutters are expanded by the upward movement of them produced by the tension of a spring, and which upward movement draws them upwardly over tapered faces of the hollow-slotted extension of the Double underreamer body, to such a position that the bearing surfaces on the backs of the shoulders of the Double underreamer-cutters rest upon the parallel bearing faces of the hollow-slotted extension of the reamer body.

Q. 121. (By Mr. BLAKESLEE.) And when bearing-faces of the cutters of the Double underreamers are in contact with the parallel faces of the hollow-slotted extension, are the lateral bearing-faces on the extended shoulders in the improved Double underreamer, as exemplified by Complainant's Exhibit Improved Double Reamer and Cutters, in contact with the parallel faces of the hollow-slotted extension?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. They are.

Q. 122. (By Mr. BLAKESLEE.) When the cutters of the improved Double reamer are in expanded position, please compare the action of the bearing surfaces upon the lateral shoulders of the cutters of the improved Double underreamer with the action of the bearing surfaces upon the shoulders

(Deposition of Elihu C. Wilson.)

of the cutters of complainant's Exhibit Wilson Underreamer.

Mr. LYON.—The question is objected to as incompetent, irrelevant and immaterial to any of the issues in this case. The claims upon which complainant rests his claim of infringement being limited to the cutters or bits as an article of manufacture, and such claims cannot be in any manner limited by the device with which such article of manufacture is used or the manner of such [125] use, the claims not being combination claims but being claims of an article of manufacture.

Mr. BLAKESLEE.—The patent in suit is for an underreamer and we have been particular to reserve as to our charge of infringement the subjects of claim 16 and 17 read in connection with all of the other parts of the patent in suit. The patent is for a machine, in contradistinction to an article of manufacture, in accordance with the clear distinction made in the revised statutes, and we contend and shall contend that claims 16 and 17 are for parts of such machine to be considered in all of their operative relations and functions.

Mr. LYON.—I think counsel understands my objection and it is not proper or necessary to argue it at this stage.

A. When the cutters are fully expanded and up into reaming position, the action of those bearings at the backs of the shoulders of the Double Improved underreamer-cutter and those bearings at the back of the shoulders of the Wilson underreamer- cutters are

(Deposition of Elihu C. Wilson.)

precisely the same. Both resist the inward strain applied to the ends of the cutters, and both rest against the spreading-bearing of the reamer body. Both resist the rotating action of the cutters, which rotation is on a vertical axis, which axis is parallel with the axis of the reamer body, and both take up that rotating action, thereby relieving the dovetail of the cutters and corresponding dovetails or grooves of the reamer bodies of that rotating strain.

Q. 123. (By Mr. BLAKESLEE.) In both the old and improved types of the Double underreamers when the bearing faces upon the cutters move over the parallel sides of the hollow-slotted extensions, please state whether or not any expansion of the cutters is caused solely by this engagement of the spreading surfaces on the cutters with such parallel faces? A. There is not. [126]

Mr. BLAKESLEE.—Subject to further examination of the present witness if the Double reamers of both types which counsel has offered to produce are so produced and offered in evidence, this ends the direct examination of the witness, and counsel may inquire at this time if he wishes to.

Cross-examination.

(By Mr. LYON.)

Q. 124. Referring first, Mr. Wilson, to Complainant's Exhibit Old Style Double Reamer Cutter No. 1, looking at this cutter from the side, you find a V-shaped cut extending inwardly from the back of the shank of the cutter, do you? A. Yes, sir.

Q. 125. What is the purpose of this?

(Deposition of Elihu C. Wilson.)

A. The purpose of that V-shaped groove or cut is to permit the cutters to collapse over the hollow-slotted extension of the Double reamer body.

Q. 126. And what portion of such cutter forms the inclined shoulder which, contacting with the inclined lower end of the body of the Double reamer, causes the expansion of the cutter?

A. The wall of the groove which is nearest to the lower or cutting end of the cutter.

Q. 127. Now, referring to Complainant's Exhibit Improved Double Reamer and Cutters, and particularly to the two cutters which have been offered as a part of such exhibit, do you find in these cutters a similar groove to that you have just identified?

A. No, sir.

Q. 128. In what respect do they differ?

A. Do you mean does the cutter differ from the other?

Q. 129. No; the groove.

A. There is no groove there at all.

Q. 130. Is the back wall or the surface of the shank of [127] either of the two cuttres last referred to by me an unbroken surface extending parallel to the surface of the front of the shank of such cutter or cutters?

Mr. BLAKESLEE.—Objected to as indefinite. There are so many faces upon the cutter and it is not clear as to where the comparison is directed.

A. It does not extend parallel with the front of the cutter but it is in a straight plane across the entire

(Deposition of Elihu C. Wilson.)

back of the shank of the cutter except for the mortised hole at the back of the shank of the cutter.

Q. 131. (By Mr. LYON.) Please examine carefully the back of one of the said cutters and state if there is, commencing from the upper end of the shank of such cutter on the back or inside surface thereof, a plane surface extending to about one-third of the mortised opening or cutter key-way to which you have just referred?

A. I thought I was answering the question previous to this with reference to the Wilson underreamer-cutter.

Q. 132. I did not know what you were talking about when you spoke of grooves here. I have assumed you were discussing the cutter of Complainant's Exhibit Wilson Reamer.

Mr. BLAKESLEE.—Let him make his statement.

A. I understood that my previous answer referred to the Wilson underreamer-cutters. Now, do you want me to answer that other question?

Mr. BLAKESLEE.—Does the witness wish that statement to go as to the last answer or how far back in his testimony?

A. I want to go back in my testimony to where this question that I erroneously answered concluded, and I want that question re-read.

Mr. LYON.—The notary will read all the questions and all the answers given by the witness and let him indicate such change as he desires to make. [128]

(The notary reads the cross-examination of the witness down to and including the question No. 127,

(Deposition of Elihu C. Wilson.)

reading as follows: "Q. 127. Now, referring to Complainant's Exhibit Improved Double Reamer and Cutters, and particularly to the two cutters which have been offered as a part of such exhibit, do you find in these cutters a similar groove to that which you have just identified?" and the answer thereto: "A. No, sir.")

A. My answer to that is yes. And the subsequent answers are in error, and if you will repeat the questions I will reanswer the questions.

Q. 133. (By Mr. LYON.) In view of the witness having apparently answered these previous questions having in mind the Wilson underreamer-cutter under misapprehension as to the subject matter in question, I will now ask the witness to state what difference if any, he finds between this groove last identified by him in the cutters of Complainant's Exhibit Improved Double Reamer and Cutters and the groove in Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

A. So far as the shape of the grooves is concerned, there is little or no difference. The grooves in the Double improved cutter are considerably closer to the body of the cutters than is the case in the old style cutter.

Q. 134. In the cutters of the so-called Improved Double underreamer the expansion surface is the inclined surface at the bottom of this groove? Is that correct? A. That is correct.

Q. 135. And in this respect such cutter corresponds with the old style Double cutter, does it?

(Deposition of Elihu C. Wilson.)

A. It does.

Q. 136. Referring to the so-called improved Double reamer as a whole, is it your understanding of such reamer that what you have termed the shoulders which you state have been [129] extended out at right angles to the shank of the cutter, perform any function in causing the expansion or collapsion of the cutters? A. Yes; they assist.

Q. 137. With what do such shoulders contact and cause either collapsion or expansion of the cutters?

Mr. BLAKESLEE.—It is to be noted that in this cross-examination counsel is treating of the co-operative portions of the reamer body, and such cross-examination is to be considered in connection with the remarks of counsel that the present issue concerns solely cutter construction.

A. The Double underreamer-cutters are expanded or contracted by a combination of means. One of those means is the inclined wall of the V-groove referred to coming in contact with the upwardly and outwardly inclined face at the extreme lower end of the hollow-slotted extension of the reamer body. The other means is the upwardly and inwardly inclined groove on the reamer body which form ways for the cutters. The collapsing of the cutters is produced by an outward motion of the cutters sliding on their spreading-bearings and during which course and while the bearings at the back of the shoulders of the cutters referred to are in contact with the parallel bearing surfaces of the hollow-slotted extension, the upper ends of the cutters tilt outwardly,

(Deposition of Elihu C. Wilson.)

sliding on the key to which they are attached. This produces a teetering action of the cutter which is the initial collapsing action of them. It will be clear that in order to produce this action it is necessary for these bearings at the backs of the shoulders of the improved Double cutter to be in contact with the face upon which the cutters teeter, and to that end these bearing faces on the backs of the shoulders of the Double underreamer-cutters assist in the collapsion of the cutter. The expansion of the Double underreamer-cutters is in a measure produced by the reverse of this action. [130]

Q. 138. (By Mr. LYON.) Have what you have termed the extended shoulders of the cutters of the so-called improved style Double underreamer any other part in the expansion or contraction than you have stated in your last answer?

A. I believe not.

Q. 139. How does this action which you have described as the action of the expansion and contraction of the cutters or bits of the so-called improved Double underreamer, differ, if at all, from the manner of expansion of the old style Double underreamer?

A. The difference is that with the improved style Double underreamer cutters the bearings at the back of the shoulders of the cutters, which shoulders extend at right angles to the shank, now share the function which in the old style Double underreamer-cutters was borne altogether by the bearing at the back of the shank of the old style cutter.

(Deposition of Elihu C. Wilson.)

Q. 140. When you use the term "bearing at the back of the shank in the old style cutter," you refer to that portion of the cutter lying below the V-shaped groove to which your attention has been called?

A. No, sir. I refer to only that portion of the cutter lying below the V-shaped groove which forms the bearing-face and which is above the body of the cutter and below the V-shaped groove.

Q. 141. How do you understand the spring-actuated rod on which the cutters are mounted in the old style Double reamer was turned down to collapse the bits and set the bits or cutters or entrance into the well-casing or hole?

Mr. BLAKESLEE.—Objected to as not cross-examination. The spring-actuated rod has not been referred to by the witness.

A. To begin with, the cutters are not mounted on the rod direct. They are attached to a key which extends through [131] the spring-actuated rod. The cutters of the old style Double underreamer were drawn downwardly or collapsed by means of a device somewhat resembling a pair of ice-tongs, you might say. They were attached to the cutters and in many instances the tongs were then tied to the derrick floor and an upward motion of the tools to which the reamer was suspended, which upward motion was produced either by the engine or by the operator turning over the bull-wheel drew the cutters downwardly over the spreading-bearings or, rather, drew the body upwardly until the spreading-bearing was

(Deposition of Elihu C. Wilson.)

partially removed from between the cutters, permitting them to collapse over the hollow-slotted extension.

Q. 142. (By Mr. LYON.) Referring to Complainant's Exhibit Old Style Double Reamer Body, there is a circular opening through the integral end of the reamer, is there? (Extending up to the central bore of the reamer body.) A. Yes, sir.

Q. 143. The spring-actuated rod plays in this circular opening, does it?

Mr. BLAKESLEE.—Objected to on the ground that it is not cross-examination.

A. It does.

Q. 144. (By Mr. LYON.) Is it a fact that such spring-actuated rods were provided with a threaded opening in their lower ends?

Mr. BLAKESLEE.—The same objection.

A. I cannot say definitely that they were. They may have been, although by recollection is that the old style cutters were collapsed as I have described above.

Q. 145. (By Mr. LYON.) Is it also a fact that with such old style reamers there was furnished a rod to screw into the end of such spring-actuated rod to draw down the spring-actuated rod and permit the setting of the bits or cutters? [132]

Mr. BLAKESLEE.—The same objection, and the witness has answered the question.

A. I could not testify as to that positively. I don't know. I don't remember.

Q. 146. (By Mr. LYON.) Is such a device pro-

(Deposition of Elihu C. Wilson.)

vided in connection with any of the Double reamers?

Mr. BLAKESLEE.—The same objection.

A. I believe that device is a part of the equipment of the improved style Double underreamer.

Q. 147. (By Mr. LYON.) And what is the purpose of such device?

A. That is one of the means employed in removing the cutters of the new style Double underreamer.

Q. 148. And in so removing such cutters such threaded rod which screws into the spring-actuated rod necessarily lies between the cutters, doesn't it?

Mr. BLAKESLEE.—Same objection.

A. It does.

Q. 149. (By Mr. LYON.) And it is necessary that the cutters be cut away slightly on their face (inner bearing face) to permit the cutters to sufficiently collapse?

Mr. BLAKESLEE.—The same objection, and the further objection that apparently counsel is attempting to testify himself in this matter.

A. I think the cutters of the improved Double underreamer are collapsed without the use of that groove at the back of them.

Q. 150. (By Mr. LYON.) Do you know anything whatever about the purpose of the making of such cut or groove in the bearing surface of the cutters of the Double improved underreamer? If so, please state.

I. B.

necessary

A. I don't see why that groove is ~~there~~ necessary for the purpose [133] of admitting that threaded rod or eye bolt.

(Deposition of Elihu C. Wilson.)

Q. 151. I will ask that the question be re-read to the witness and that he answer it yes or no directly. (The question is read by the notary.) I am asking for knowledge and not for conjecture.

A. I don't know.

Q. 152. Referring now to the cutter of Complainant's Exhibit Wilson Underreamer, how much above the lateral bearing face of the cutter itself does the shank of such cutter extend?

Mr. BLAKESLEE.—Objected to as calling for a matter of dimension, made manifest by an inspection of the cutters.

A. The flat length of the shank?

Q. 153. (By Mr. LYON.) What surface or surfaces in the Wilson underreamer cause the expansion of the cutters thereof?

A. The bearing surfaces on the backs of the shoulders of the body, which shoulders extend at right angles to the shank.

Q. 154. These surfaces are located at the sides of the lowermost portion of the shank of the cutter, are they?

A. They are located below and beyond the sides of the shank.

Q. 155. When you say "beyond" you mean laterally and at right angles to the shank, do you?

A. I do, yes.

Q. 156. Point out on this cutter and locate by verbal description the part which contacts with the inclined lower end 17 of the Wilson underreamer, as shown in the drawings of Complainant's Exhibit

(Deposition of Elihu C. Wilson.)

Wilson Patent, in expanding.

A. The upper corners of the two projecting shoulders of the body of the underreamer-cutter, which shoulders have bearings at their back.

Q. 157. Correspondingly, point out such part in the so-called Double improved cutter which contacts with the inclined end of the reamer body to cause such expansion, and verbally [134] describe it.

A. The corresponding point on the improved Double underreamer cutter, or, rather, the point which comes in contact with the extreme lower end and beveled faces thereof of the hollow-slotted extension of the Double underreamer body, is, as previously described, the lower wall of the V-shaped groove which is planed across the back of the cutter.

Q. 158. And that is true also of the so-called old style Double cutter, is it? A. It is.

Q. 159. What part in expanding the cutters of the device of Complainant's Exhibit Wilson Patent does that portion of the cutter play which lies between the expansion bearing faces 4³?

A. It does not contact with anything.

Q. 160. Has it any part in the expansion of such cutters? A. None whatever.

Q. 161. How much above the plane of the surfaces 4³ does such surface to which I have last called your attention in the Wilson underreamer-cutter lie?

Mr. BLAKESLEE.—Objected to as calling for a mere matter of dimensions best determined by actual inspection and measurement of the device, and also as indefinite in the use of the term "above."

(Deposition of Elihu C. Wilson.)

A. In the case of this $4\frac{1}{2}$ inch cutter, it varies, as it does in all the Wilson underreamer-cutters. That portion referred to is at an angle with the plane of the bearing surfaces at the back of the shoulders of the cutters.

Q. 162. (By Mr. LYON.) That angle projects that surface inward toward the center of the underreamer when the cutters are in position?

A. Do you refer to the angle at the—

Q. 163. The angle that you have just referred to.
[135]

A. And which lies between the bearing faces?

Q. 164. Yes.

Mr. BLAKESLEE.—Objected to as indefinite with respect to the surfaces on the underreamer or even the body of the reamer, as apparently there is no body portion intermediate of such surface.

A. When they are in reaming position?

Q. 165. (By Mr. LYON.) When they are in reaming position in any form whatever.

A. That only projects downward and outward when in reaming position, and when in contracted or collapsed position it is supposed to be practically parallel to the longitudinal axis of the reamer body.

Q. 166. And in both instances that surface so formed on such angle lies inward towards the center of the reamer body, as contrasted with respect to the bearing surfaces 4³?

A. It is the opposite angle from the bearing faces 4³.

Q. 167. And the surface is projected inward from

(Deposition of Elihu C. Wilson.)

such surfaces 4³; is that correct?

A. Yes, sir; upward and inward.

Q. 168. And what is it in the device shown in the drawings of the Complainant's Exhibit Wilson Patent, or the Exhibit Wilson Underreamer, which permits the use of such inwardly extending surface?

Mr. BLAKESLEE.—Objected to as indefinite and incomplete.

A. What is it that permits the use of it? Is that the question?

Q. 169. (By Mr. LYON.) That is it.

A. The surface has no use at all.

Q. 170. Has the metal which forms this surface no use whatever?

A. The metal has, but that particular face bears on nothing. [136]

Q. 171. What is it that prevents the use of this metal which forms this surface?

Mr. BLAKESLEE.—The same objection.

A. It is simply a part of the back of the cutter body and that portion of the cutter body which remains after forming the bearing surfaces 4³.

Q. 172. (By Mr. LYON.) Then these bearing surfaces 4³ are cut down from such metal?

A. Yes, sir.

Q. 173. Could a bit or cutter with such projecting metal in this form between such bearing surfaces 4³ be used in either Complainant's Exhibit Old Style Double Reamer body or the so-called improved Double reamer body, without material change therein?

A. Correspondingly the same material is in the

(Deposition of Elihu C. Wilson.)

Double underreamer-cutter of the improved style that exists in the Wilson underreamer-cutter. That portion of the material in the Wilson underreamer-cutter is made prominent by the angular bearings at the shoulder. The only difference is in the angularity of the bearings at the backs of the shoulders of the cutters.

Q. 174. Does such metal perform any function in the cutters of either the old style Double reamer or the so-called improved style Double reamer when in use in a Double reamer?

A. Yes, sir; it adds strength to the cutters of both styles.

Q. 175. Does it project beyond the plane of the thrust-bearing surfaces of the cutters of such Double reamers?

A. You refer to the inward thrust-bearing surfaces at the back of the cutters?

Q. 176. Yes.

A. No, sir; that metal is on a plane with those bearing surfaces, with the exception of that portion of it which is [137] made a vertical groove.

Q. 177. In the cutters of the Wilson underreamer this metal projects beyond the plane of these bearings 4³, does it?

A. Yes, sir; they project inwardly toward the center of the axis of the reamer body and beyond the bearings referred to.

Q. 178. Could such construction be utilized in either of the so-called Double old style or improved Double, without material change therein?

(Deposition of Elihu C. Wilson.)

A. So far as that particular material is concerned, it could be.

Q. 179. Please explain how.

A. By removing the portion of the metal from the backs of the shoulders of the cutter, lowering the bearing faces at the backs of the shoulders of the improved Double underreamer cutter.

Q. 180. You would not have to cut away any portion of the solid end of either the so-called old style or so-called improved style Double underreamer to utilize such inwardly projecting metal on the bits or cutters? A. No, sir.

Q. 181. You have stated in your direct examination that constructing the underreamer, in accordance with the drawings of the Complainant's Exhibit Wilson Patent permitted the use of more stock in the cutters, and, therefore, a longer life of the cutters. Please explain in what respect this is true.

A. By the design of the Wilson underreamer, having its spreading-bearings projecting downwardly and between the bodies proper of the cutters, the fulcrum or pivotal point on which the cutter tends to rock when crushing the lower ends toward each other, is transmitted down to the strongest part of the cutter. This permitted us to use a longer body on our cutters with safety. In other words, we could add more material to the cutting end of the cutters. This increased the length of the cutters. Adding to [138] the bulk of the cutter and also adding to the bulk by widening the cutters gives more metal which must be worn out before the cutter becomes useless,

(Deposition of Elihu C. Wilson.)

unless it be broken. With the old style Double underreamer cutter that pivotal point was not at the strongest part of the cutter but was up on the shank of the cutter, and to add to the length of the body of the cutter, increasing the material in it, increased the leverage on the cutter, which leverage is brought into play by the inward crushing action when the cutters are crowded towards each other when reaming in the hole, and the strain on the cutter by reason of the added length was such that the cutters would be broken at their weakest point, namely, through the shank. Furthermore, the old style Double underreamer cutter was very much narrower than the Wilson underreamer cutter, and the bulk in the cutter was consequently less.

Q. 182. Do you mean to state by your last answer that the proportionate length of the cutters to the body of the Double reamer has been made greater in the so-called improved Double underreamer than it was in the so-called old style Double underreamer?

A. The body of the cutter of the improved type Double underreamer cutter is longer than the body of the cutter of the old type.

Q. 183. What portion do you refer to in your last answer as the body?

A. The same portion we have always referred to in our description as to the body of the underreamer cutter.

Q. 184. Please state it.

A. It is that portion of the underreamer cutter which extends downwardly and is a continuation of

(Deposition of Elihu C. Wilson.)

the shank. It is the widest and largest part of the cutter.

Q. 185. Do you mean to testify that the proportionate length of the cutters over all in the so-called improved Double [139] reamers have been made longer than in the so-called old style Double reamer?

A. The old style Double underreamer-cutters had longer shanks than are the shanks of the new style Double underreamer-cutter. But their bodies were shorter. The bodies are the only portion of the cutter which is heated and dressed up to size repeatedly when in use, and is the only part of the cutter which actually performs the reaming or cutting, and, consequently, the length of the body is the important part to be considered in determining the life of the cutter.

Q. 186. Will you please point out to us the spreading surfaces of the reamer body of the old style Double underreamer?

A. The spreading surfaces consisted of the angular faces or downwardly and inwardly projecting faces of the hollow-slotted extension. Also, the upwardly and inwardly inclined faces or walls of the shoulders or retaining means of the body itself, which means co-act with the dovetail shoulders on the cutters.

Q. 187. Point out the corresponding surfaces in the Wilson underreamer, both in the exhibit in evidence and in Complainant's Exhibit Wilson Patent.

Mr. BLAKESLEE.—Objected to as indefinite and improperly assuming, in the use of the word “corresponding.”

(Deposition of Elihu C. Wilson.)

A. In one sense those features are not analogous. The only spreading means with which the Wilson underreamer body is provided are the downward and inwardly inclined faces at the extreme lower end of the prongs of the body, together with the downwardly and inwardly inclined bearing faces at opposite sides of the spreading-bearings of the two prongs, which spreading-bearings are below the dovetails or retaining means of the reamer body. There are no angular ways or dovetails or retaining means there appearing on the Wilson underreamer body which can in any way assist or co-operate with the other spreading means to expand or contract the Wilson underreamer cutters. [140]

Q. 188. In what sense are they analogous?

A. They are analogous merely in that they are spreading means or expanding means. Both underreamers are provided with such means. Other reamers in use long before the advent of either the Wilson underreamer or Double *or Double* improved underreamer have employed spreading means whereby the cutters were expanded or contracted. To that degree the spreading means of the Wilson underreamer and of the Double underreamer may be said to be analogous.

Q. 189. Would you then testify that the mode of operation or principle of action of the Double underreamer and the underreamer of Complainant's Exhibit Wilson Patent or the exhibit Wilson Underreamer in expanding the cutters or in contracting the cutters was the same or substantially the same

(Deposition of Elihu C. Wilson.)

or substantially different?

Mr. BLAKESLEE.—Objected to as calling for a sweeping conclusion on the part of the witness, involving even conclusions of law as well as of fact, and going further than the direct examination has prepared the way for, in that the present inquiry relates to definite parts and actions and co-operation.

A. I have previously testified that the mode of operation or the means by which an operator puts either of these underreamers into use is very much the same. The same could be said in comparing either of these reamers with underreamers of other makes and which preceded these reamrs. But the principals of action and the means employed within the reamer itself or their cutters, to produce this expansion and contraction, are decidedly different.

Q. 190. (By Mr. LYON.) Am I correct then in understanding your last answer that you consider such principles of action and the relation of the parts to each other to secure such action in expansion and contraction in the Double reamers and the Wilson [141] reamer of Complainant's Exhibit Wilson Patent or of the exhibit Wilson Reamer here in evidence, were radically different and distinct, one from the other?

Mr. BLAKESLEE.—Objected to as calling for the same sweeping conclusions, without relation to the definite matters and features constituting the proper examination of this witness.

A. There is a difference, but the difference is not nearly so marked in comparing the Wilson under-

(Deposition of Elihu C. Wilson.)

reamer with the new style Double underreamer. The new style Double underreamer has employed some of the means which were original with the Wilson underreamer.

Q. 191. (By Mr. LYON.) Please point out which one of these do at this time, and fully.

A. The Double underreamer, improved style, has transferred a portion of the bearing surface at the backs of the cutters down to the body of the cutter and extended the body of the cutter at right angles to the shank, forming the shoulder. These shoulders ride on bearings which the improved Double underreamer body is provided with and which was produced by cutting a V-shaped groove at the lower end of the dovetailed way of the body, thereby extending the parallel bearing faces of the hollow-slotted extension out through to the periphery of the body. These bearing shoulders on the cutters

I. B. extended

ride up on to this/~~extending~~ bearing
of

~~and~~/the reamer-body and contact with other spreading-bearings on the body during a portion of the expansion and contraction of the cutters. In that respect the improved Double underreamer employs the same means found in the Wilson underreamer.

Q. 192. Is the principle of action of the related devices in such improved Double underreamer *is* expansion and contraction the same or substantially the same as that of the Wilson underreamer?

Mr. BLAKESLEE.—The same objection, and the further [142] objection that it is indefinite.

(Deposition of Elihu C. Wilson.)

A. I have previously stated that there is a similarity.

Q. 193. (By Mr. LYON.) Do you consider them substantially the same in their mode of action and principle of action in expansion and contraction?

Mr. BLAKESLEE.—The same objection, and also on the ground that it has been substantially answered before.

A. I don't know that I can reply any fairer than by saying that there is a similarity produced by the change in design of the Double underreamer as employed by the improved type, and which similarity did not exist at all in the old type Double underreamer when compared with the Wilson.

Q. 194. (By Mr. LYON.) I will request that the question be re-read to the witness and that he answer it yes or no.

Mr. BLAKESLEE.—It is to be noted that the witness has pointed out the changes in the improved Double underreamer as over the old style Double underreamer, due to the incorporation of the features of the Wilson reamer, and has answered this question also before.

Mr. LYON.—The interruption by counsel is objected to as merely argumentative, and as a violation of the rules in equity which require objections to be stated without argument, and notice is given that if such argument is continued on the record the defendant will move for an assessment of costs against complainant.

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—We will base the same objection previously made upon the remarks last put on the record, and incorporate them in the objection so that the objection may be fully and clearly understood for the benefit of counsel in his further questions. The equity rules require that the objection be definite so that it may be fully understood.

(The question is read by the notary.) [143]

A. I should state that in their mode of action and mode of operation or the means, aside from the features of the reamers themselves—

Mr. LYON.—Q. 195. (Interrupting.) The question is limited to the reamers themselves, and not to the manner of operation as an underreamer by operatives, but how the parts act together to assume expanded position or contracted position.

A. With that explanation the question is understood. I have always endeavored to differentiate between the mode of operation and the means or principles of operation. I think it is proper to make a distinction. If you refer purely to the devices themselves, I will say that the principles of action are different.

(By consent an adjournment is now taken until to-morrow, Thursday, March 26, 1914, at 10 o'clock A. M., at the same place.)

Thursday, March 26, 1914,
10 o'clock A.M.

This being the time and place to which the further taking of proofs was continued, proceedings are now resumed.

(Deposition of Elihu C. Wilson.)

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

ELIHU C. WILSON, complainant, recalled on his
own behalf:

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 196. Your answer to questions Nos. 193, 194 and 195 state that the principles of action of the related devices in the Double improved underreamer in expansion and contraction of the bits, are different from the principles of action of the Wilson underreamer of Complainant's Exhibit Wilson Patent in expansion [144] and contraction of the bits, considering not merely the general manner or mode of use of the underreamer but the principles of the parts of the underreamer in effecting such expansion and contraction. But you did not state in such answers what degree of difference you find in such principles of action and the means of utilizing such principles of action. I therefore ask you again whether you consider these differences radical and effecting a utilization of different principles or merely a modification in the detail of the same principles of action.

Mr. BLAKESLEE.—Objected to as not cross-examination, in so far as the question concerns and contemplates anything further than cutter-structure and the structure of the parts of the reamers which co-operate with the cutters in expanding ac-

(Deposition of Elihu C. Wilson.)

tion. And further on the same ground heretofore urged, namely, that it calls for an arbitrary defining of degree and for a statement of sweeping conclusions without relation to definite matters and features constituting the proper examination of this witness. Furthermore, the witness has already exhaustively treated of the structures properly involved in this question, and of their functions and operative effects, and the question is apparently reaching after something beyond the scope of this inquiry.

A. The features employed by the Double improved underreamer, which features are parts of the body and cutters and not means or forces other than those which are parts of the cutters and body and which are used to expand and contract the cutters, are quite different from those employed by the Wilson underreamer. There is a decided similarity in the action of bracing the cutters and the means whereby the cutters are braced, whereby the Double improved underreamer resembles that of the Wilson underreamer, and which similarities did not exist in the old style Double underreamer.

Q. 197. (By Mr. LYON.) Please point out to us and describe [145] succinctly each one of the features "of bracing the cutters and means whereby the cutters are braced, whereby the Double improved underreamer resembles the Wilson underreamer, and which similarities did not exist in the old style Double underreamer," as referred to in your last preceding answer.

(Deposition of Elihu C. Wilson.)

A. The features I have in mind and by which the Double improved underreamer resembles the Wilson underreamer, are those which constitute the differences between the old style Double underreamer and the improved style Double underreamer. By widening the cutters of the old style Double underreamer, extending the bodies at right angles to the shanks, producing projecting shoulders on the bodies, and which project beyond the outside dimensions of the dovetails of the shanks, are a means so provided on the Double underreamer-cutter for bracing the cutter against one of the most trying strains to which the underreamer-cutter is subjected when in use. With the widened body of the underreamer-cutter it, of course, was necessary to provide a corresponding bearing on the body in order to utilize these added bearings at the backs of the cutters. To do so, the faces—parallel bearing faces—of the hollow-slotted extensions were extended at right angles to the axis of the reamer body by cutting a V-shaped groove out through the lower ends of the dovetails or retaining body, and clear through to the periphery of the body. These features did not exist in the old style Double underreamer-cutter nor body, and those are the features of our Wilson underreamer which we claim the improved Double underreamer infringes. Those very features were employed on the cutters and on the body of the Wilson underreamer from the beginning. The features added to the old style Double underreamer body and cutter, when constructing the improved style and

(Deposition of Elihu C. Wilson.)

which we claim infringe the Wilson underreamer patent, do not have so much to do with the expansion or contraction of the cutters as they do with other requisites of a [146] successful underreamer. Consequently, while the improved style Double underreamer does employ some of the same features and aids in expanding and contracting that are employed in the Wilson underreamer, such infringement is not of as great importance as the increased cutting surfaces of the cutters and the additional bracing and strengthening of the cutters wherein we claim the Double underreamer infringes the Wilson underreamer patent.

Q. 198. Is the principle of expansion and contraction of the cutters of the so-called Double underreamer and that of the so-called improved Double underreamer the same?

Mr. BLAKESLEE.—The same objection as heretofore urged.

A. I have stated before that there is a difference.

Q. 199. (By Mr. LYON.) Is that difference one of degree or are they substantially different so as to be independent principles in your opinion?

Mr. BLAKESLEE.—The same objection, and the further objection that it calls for a mere academic conclusion.

A. I should say it was one of degree.

Q. 200. (By Mr. LYON.) Is the principle of expansion and contraction of the Wilson underreamer of Complainant's Exhibit Wilson Patent or of Complainant's Exhibit Wilson Underreamer the

(Deposition of Elihu C. Wilson.)

same as that of the so-called old style Double underreamer?

Mr. BLAKESLEE.—The same objection, and the further objection that it is not cross-examination.

A. No, sir.

Q. 201. (By Mr. LYON.) Please explain in what that difference of principles consists.

Mr. BLAKESLEE.—The same objection.

A. The old style Double underreamer has for its spreading-means, which means are on the body, a hollow-slotted extension or stationary wall or partition, which stationary wall or partition lies between the dovetail grooves or retaining members. [147] which form ways for the cutters. The lower end of this hollow-slotted extension terminates in a V-shaped wedge. The faces of the hollow-slotted extension, except those of the extreme lower end, are parallel. In addition to those means the above-mentioned grooves or ways for the cutters are inclined downwardly and outwardly. The combination of these features just mentioned produce the expansion of the cutters. The cutter itself has a V-shaped groove planed across the back of the shank of the cutter. The bearing surface at the back of the cutter and which comes in contact with the bearing-surface of the hollow-slotted extension, namely, the parallel bearing-faces, lies just below this V-shaped groove and above the body of the cutter. In other words, it rests wholly upon the back of the shank of the cutter. The cutter is also provided with dovetail shoulders to engage in the angular

(Deposition of Elihu C. Wilson.)

grooves or dovetail ways on the body. The cutters are collapsed by drawing them downwardly until the bearing-faces at the backs of the cutters and below the V-shaped grooves go below the parallel bearing-faces of the hollow-slotted extension and to such a point that there is no material or metal of the hollow-slotted extension to hold them apart. Then they collapse by the V-shaped groove following inwardly until the inner walls of same are virtually parallel with the walls of the hollow-slotted extension. In addition to the collapsing caused by the cutter closing over the extreme lower end of the hollow-slotted extension, another and independent means of collapsing the cutter exists or takes place, due to the cutter following the downwardly and outwardly inclined faces of the dovetail ways in the body. The expansion of the cutters is produced by the reverse of this action, whereby the cutters are drawn upwardly over the spreading-bearings and following the upwardly and inwardly inclined groove on the reamer body, and tilts the cutters inwardly at their upper ends, which, of course, pries the cutting edges of the cutters outwardly as they [148] tilt or teeter over the bearings of the parallel bearing-faces.

The means employed by the Wilson underreamer to expand or contract the cutters are very different, in that we do not employ upwardly and inwardly-inclined grooved or dovetailed ways. Such grooves or dovetailed ways are displaced entirely, and we use parallel shoulders extending vertically and at

(Deposition of Elihu C. Wilson.)

opposite sides of the body, and which shoulders are parallel to each other. By being parallel, of course any possibility of tilting the cutter inwardly as it is drawn up, or allowing the possibility of tilting the upper end of the shank of the cutter inwardly as it follows the dovetailed shoulders, or the possibility of the upper ends of shanks of the cutters tilting outwardly as they are drawn down, is entirely obviated. The only expansion or contraction means used or employed by the Wilson underreamer are those which form the extreme lower projections of the two prongs of the reamer body, which projections extend downwardly below the lower end of the dovetailed shoulders, which shoulders exist on the inner walls of the two prongs. These downward projections have bearing-faces at opposite sides, which bearing-faces are tapered and which project downwardly and inwardly. The extreme lower end or faces of these projections form a more radical angle tapering downwardly and inwardly, forming a V-shaped wedge. The cutters are provided with shoulders which project at right angles to the shanks of the cutters, such shoulders having bearings on their inner faces and are made to coact with the two separate and distinct spreading-bearings mentioned, namely, the V-shaped wedge end of the lower ends of the prongs, and the tapering bearing-faces at the sides of the prongs. The cutters are collapsed by drawing them downwardly, and as their bearing-faces are angular, the cutters are permitted to collapse at once on their initial downward movement

(Deposition of Elihu C. Wilson.)

by following the downwardly and inwardly-inclined bearing-faces. As soon as the bearing shoulders on the cutters reach the lower [149] end of the bearing-faces of the prongs and drop over the upper corners of the V-shaped end, the collapse is more sudden from that period on and a very short downward stroke permits them to collapse completely. Their expansion is produced by the reverse action, whereby the cutters are drawn upwardly over the V-shaped end and up on to the angular bearing-faces at the lower ends of the prongs. The upper ends of the cutters, that part coming in contact with the suspension-means, merely pivot or swing from the suspension-means, whereas with the Double underreamer in order for the upper ends of the cutters to follow the angular dovetailed grooves of the body it is necessary for them to slide outwardly on the key or suspension-means as they are being collapsed, and to slide inwardly on this key or suspension-means while they are being expanded. Such an action does not take place with the Wilson underreamer-cutters.

Q. 202. (By Mr. LYON.) Would it be a correct summary of your last answer and of your testimony in regard to the subject of the last preceding question, to state that you consider the principles of operation and coaction of the bits and body portion of the said reamers in expansion and contraction to be radically and mechanically different?

Mr. BLAKESLEE.—We object to counsel testifying without being sworn. The answer of the witness speaks for itself and counsel can summarize it

(Deposition of Elihu C. Wilson.)

in argument as he wishes. If counsel wishes him to testify further in answer to the previous question, let him ask him to do so.

A. The principles of expansion and contraction as employed by the old style Double underreamer and the Wilson underreamer are radically and mechanically different.

Q. 203. (By Mr. LYON.) Do you consider that the extension, as you have termed it, of the thrust-bearings laterally on what you have termed the hollow-slotted extension or end portion of the [150] Double underreamer is utilized to employ the same principles of action in expansion and contraction of the cutters that are employed in the Wilson underreamer?

Mr. BLAKESLEE.—Objected to as calling for a mere conclusion and not calling for those definite statements which it is believed the witness has already several times made as to the action of the several parts in co-operation, and is therefore merely repetitious.

A. I think I have testified previously that in so far as the bearings at the backs of the extended shoulders of the improved Double underreamer rest upon and bear upon a bearing provided on the improved Double underreamer body during a portion of its expansion or contraction of the cutters, is similar to the same action and same principles of expansion and contraction used by the Wilson underreamer.

Q. 204. (By Mr. LYON.) Please, now defi-

(Deposition of Elihu C. Wilson.)

nitely point out and describe that portion of the principle of expansion of the Wilson underreamer to which you refer in your last answer.

A. In order for the Wilson underreamer-cutter to be expanded or contracted, it is necessary for the bearings at the backs of the shoulders to be in contact with the spreading-bearings on the reamer body. The same can be said of the improved Double underreamer.

Q. 205. That is the extent of the similarity to which you have referred?

A. Yes, sir; that is the extent.

Q. 206. In the cutter or bit of the old style Double reamer, so-called, with reference to the longitudinal extension of such bit, including the body and shank, the dovetail ribs or shoulders on such bit extend in a straight line parallel to the longitudinal axis of such bit? [151]

Mr. BLAKESLEE.—Objected to as indefinite what surfaces are contemplated in this question.

A. Do you mean to ask whether the sides of the cutter are parallel and in a plane with the extreme outside dimensions of the dovetails?

Q. 207. (By Mr. LYON.) No. If the general direction of the dovetails is straight with the axis or longitudinal extension of the bit.

Mr. BLAKESLEE.—The same objection.

A. In other words, whether the dovetail shoulders on same are parallel with the back of the cutter?

Q. 208. (By Mr. LYON.) Or in a straight line with a straight action, or are they arranged at an

(Deposition of Elihu C. Wilson.)

angle so as to coincide and conform to the inclination of the dovetails in the body of the Double underreamer and co-operate therewith in the tilting action of the cutters, as explained by you?

A. They are at an angle and are made to conform to the downwardly and outwardly projecting grooves or dovetailed ways of the reamer body.

Q. 209. And the purpose of this angle of the dovetails of the cutters is to coact with the inclination of the dovetailed ways for the purpose of assisting the tilting action in the Double underreamer. Is that correct?

A. The dovetailed shoulders on the cutters are formed at that angle for the purpose of coacting with the dovetailed groove or retaining way on the reamer body while the cutter is in expanded position and while it is in operation.

Q. 210. That is true. But my question is, is the formation of these dovetails on the cutters of the Double underreamer also for the purpose of co-operating with the inclination of the dovetailed ways on the body of the Double underreamer to effect a portion of the expansion and contraction of the bits in the manner to which you have referred? [152]

A. No, sir; the angularity of the shoulders on the cutters does not assist in expanding or contracting the cutters, but the angularity of the dovetailed way on the body does so assist.

Q. 211. Comparing the dovetails of the Double cutter, either old style Double reamer-cutter or improved style Double reamer-cutter, with the dove-

(Deposition of Elihu C. Wilson.)

tails on the side of the Wilson cutter, as exemplified in Complainant's Exhibit Wilson Underreamer, do you find these dovetails to be the same?

A. No, sir; they are not the same.

Q. 212. What is their difference?

A. The dovetails of the Wilson underreamer-cutter are of uniform thickness, measuring from the back of the cutter outwardly, and are parallel to the back of the cutter. The inner face of them is

I. B. parallel
practically to the back of the cutter. The inner face of the dovetail of the Double underreamer-cutter is not of uniform thickness, and the inner face of the dovetail shoulder is not parallel to the back of the cutter.

Q. 213. Is this difference which you have last pointed out in the dovetails of the Wilson underreamer-cutter and of the Double underreamer-cutters necessary to the difference in principles of action in expansion and contraction to which you have called our attention?

A. Yes, sir; they are necessary.

Q. 214. In what manner and how?

Mr. BLAKESLEE.—Objected as *as* merely repetitious. The witness has testified how these co-operating dovetails or cutter and body portions operate in expansion and contraction in both the Wilson and Double reamers, and he has so testified within the last thirty minutes.

A. The Wilson underreamer-cutter is so formed and the dovetails are thrown so far back toward the

(Deposition of Elihu C. Wilson.)

center of the body when the cutters are in place that if we changed the angularity [153] of the backs of the cutters, increasing the thickness inwardly or at the backs of the cutter-shanks, they would not collapse together to the degree that is necessary and, therefore, the design and proportions of the Wilson underreamer body just about enables us to use that much stock at the backs of the cutters and no more. When the cutter is expanded to full reaming position, it is necessary to have the entire face of the dovetails coact with the dovetailed shoulders on the inner walls in order to brace the cutter to the fullest degree. Therefore the dovetails of the cutter are proportioned and shaped as they are. With the Double underreamer the action is different. The cutter follows in a beveled groove or an angular groove. The groove is larger at the bottom than it is at the top, and the backs of the cutters have to be cut out in order for the cutter to collapse over the spreading end, and consequently that difference exists there in that feature when compared with the Wilson underreamer, for the reason that this groove at the back of the cutter changes the angularity, making the back of the cutter out of parallel with the front face of the dovetailed shoulders of the cutters.

Q. 215. (By Mr. LYON.) As you understand the Double underreamer, either the so-called old style or so-called improved style, could the dovetailed ways on the body of such reamer and the dovetails on the bits of such underreamer, be made straight as in Wilson underreamer cutters, without changing mate-

(Deposition of Elihu C. Wilson.)

rially the principles of action of such parts or the mode of co-operation of such parts in the reamer?

A. If the dovetailed groove or dovetailed ways in the body of the Double underreamer, either the new style or the old style, were straight and parallel to the axis of the reamer body, and the dovetail cutters on the shoulders or shanks of the cutters were made to fit them, the cutters would not expand nor contract. [154]

Q. 216. As I understand your last answer, you mean that such modification as I have last suggested would be impossible with the Double underreamer either of the old style or the new style.

A. The changes I have outlined would simply make the cutter inoperative. They would simply travel in the grooves or dovetailed ways, and would not expand or contract.

Q. 217. You have produced here only cutters alleged to have been manufactured by the Union Oil Tool Company or the Union Tool Company, of either the old style, so called, Double underreamer or improved Double underreamer, and cutters of the Wilson underreamer manufactured either by yourself or the Wilson & Willard Manufacturing Company for you. Do you claim that the Union Tool Company has made or sold any cutters for the Wilson underreamer? A. I do not.

Q. 218. And your claim of infringement in this cause rests solely upon the cutters manufactured by the Union Tool Company for its so-called improved Double underreamer? Is that correct?

(Deposition of Elihu C. Wilson.)

A. No, sir.

Q. 219. Wherein is it incorrect?

A. We claim that they are infringing our original claim. We claim that you are infringing both in the body and in the cutters.

Q. 220. But solely by the so-called improved Double underreamer?

A. Yes, sir; by the so-called improved Double underreamer.

Q. 221. In the so-called improved Double underreamer will it in any manner affect the principle of expansion or contraction of the bits or cutters if what you have termed the [155] laterally extended shoulders of the cutters were planed off from the cutters?

Mr. BLAKESLEE.—Objected to as repetitious. The witness has testified how these projections participate and to what extent they participate in the action of the cutters.

A. By removing that feature of the improved Double underreamer cutter, namely, to transform the cutter back to its old form, with the exception of still allowing a portion of the spreading-bearing face at the back of the body of the cutter, the cutters would expand and would contract. It would have the advantage of the bracing action which we claim for the Wilson under-reamer cutter to a certain degree, for the reason that the fulcrum would still be across the body, instead of across the shank, as was the case with the old style Double underreamer-cutter.

(The question is read by the notary.)

(Deposition of Elihu C. Wilson.)

Mr. LYON.—Let the record note that the question is reread to the witness and he is requested to answer it yes or no.

A. So far as the mere act of expanding and contracting, the cutters would still have that same action.

Q. 222. Then the principles of contraction and expansion of the cutters in the old style Double reamer and in the improved Double reamer are the same, are they?

A. No, sir; I have explained before that they are different. I do not say that they would expand in the same manner. I say that the cutters would expand by making the change you suggest.

Q. 223. What is the difference, if any, in the manner of expansion, then, in that regard?

Mr. BLAKESLEE.—Objected to as mere repetition. The witness has testified fully as to the manner of expansion of the cutters of the improved Double reamer, and treated in such discussion fully the features of alteration in those cutters with respect to the cutters of the old style Double reamer.
[156]

A. The fulcrum point, or point against which the back of the cutter rests during part of its expansion or contraction, is transferred downwardly in the new style Double underreamer-cutter even with the change that you suggest of planing off the shoulders at the sides of the cutter until the fulcrum is across the body of the cutter instead of across the shank of the cutter. The teetering action is extended further down the cutter than is the case with the old style.

(Deposition of Elihu C. Wilson.)

Q. 224. (By Mr. LYON.) And this is due to what?

A. Due to the change in the design of the cutter.

Q. 225. Please point out such feature of each design to which you last refer, and describe it particularly, so that we may not hereafter fall into any error as to what you exactly mean.

A. I do not believe I am in error. The shape of the two cutters is apparent, and when you look at the backs of them it is apparent even to a novice in mechanics that the bearing-faces of the old style Double underreamer-cutter are immediately back of the shanks of the cutters and do not, project downwardly to such a point as to place them back of the body of the cutter. Now, with the new style Double reamer-cutter, or the improved type, this bearing-face is carried downwardly until the extreme back of the body of the cutter forms a portion of that bearing.

Q. 226. How much is carried down? To what degree?

Mr. BLAKESLEE.—Objected to as calling for a determination of dimensions best arrived at by computing to scale.

A. In the case of the improved style of cutter which we have at hand, it appears that about half of the vertical dimensions of the bearing is on the body and about half of it is on the shank.

Q. 227. (By Mr. LYON.) And in this so-called improved style where is the shoulder located which contracts with the inclined shoulder at the bottom of

(Deposition of Elihu C. Wilson.)

the Double reamer body to tilt the cutter outward in expanding? [157]

A. That shoulder forms the lower wall or bound-
I.B. groove

ary of the V-shaped ~~cutter~~ which is planed
across the shank of the cutter.

Q. 228. Is such groove proportionally lower than
in the old style Double cutters?

Mr. BLAKESLEE.—Objected to as indefinite, as
the question inquires as to whether it is lower or is
not lower.

A. Yes, sir; that groove is very much closer to the
body of the new style Double underreamer than was
the case in the old style.

Q. 229. (By Mr. LYON.) Please explain a little
more exactly what you mean when you state that in
the Double improved cutter the fulcrum is on the
body instead of across the shank.

A. When the cutter of the Double underreamer
begins its initial downward movement, when in the
act of collapsing the cutter, the pressure against the
pipe or shoe, by which force the cutter is crowded
downwardly, tends to crowd the lower or cutting ends
of the cutters towards each other. As the cutter
moves downwardly in its angular dovetailed grooves,
the bearing-ends of the shanks of the cutters are
tilted outwardly and is, of course, the opposite mo-
tion of the inward action of the lower end of the
cutter. In other words, the cutters teeter over their
spreading-bearings. The point of contact between
the cutter and the spreading-bearings is thus trans-

(Deposition of Elihu C. Wilson.)

ferred to the extreme lower edge of the bearing at the back of the cutters, and this extreme lower edge is wholly across the body of the cutter. All of the bearing-face at the back of the cutter, both on the shanks and on the body, is out of contact with the expanding bearings or the parallel bearings of the hollow-slotted extension, with the exception, as previously mentioned, of the extreme lower edge of that bearing. At the extreme lower edge of the bearing, and which bearing extends across the body, and in the case of the improved Double underreamer-cutter forms the fulcrum or teetering point of the cutter.

[158]

Q. 230. Isn't that the same teetering or tilting action that was present in the old style Double underreamer, so-called, except that the position of the bearing surfaces has been arranged nearer the lower end of the cutter?

A. The same teetering action did exist, but the position of the fulcrum was altogether different in the old style Double underreamer cutter from its position in the new style or improved Double underreamer cutter.

Q. 231. Now, please answer the question. (The question is read by the notary.)

Mr. BLAKESLEE.—Now, read the answer. (The notary reads the witness' answer.)

A. I think my former answer replies to the question.

Q. 232. (By Mr. LYON.) Then your former answer is that there is a material difference?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The answer is on the record, and if further answer is requested let it be called for.

Mr. LYON.—We submit that we are entitled to a direct and positive statement and are not required to rest upon the implication or inference of the answer. If the witness considers that these two things are substantially different, he can answer the question yes or no and so state positively.

Mr. BLAKESLEE.—He has pointed out the difference.

Mr. LYON.—But he has not answered the question positively.

A. Read my answer again. (The notary reads the witness' answer.)

A. Yes. The teetering action does not exist in both cases. The position of the fulcrum in the improved style Double underreamer-cutter is moved further down towards the cutting edge of the cutter, changing its position altogether from that of the old style Double underreamer-cutter.

(By consent an adjournment was taken until 2 o'clock P. M.) [159]

Thursday, March 27, 1914,
2 o'clock P. M.

This being the time and place to which the further taking of proofs was continued, proceedings are now resumed.

ELIHU C. WILSON, complainant, called as a witness in his own behalf.

(Deposition of Elihu C. Wilson.)

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 233. And such tilting action, over what you have termed the fulcrum on the body in place of across the shank of the cutter in the new style or improved Double underreamer and cutter, would be present if the laterally extended shoulders of the cutters, which you have termed the lateral extension of the bearing-surface of such cutters, were planed off of said cutters, would it?

A. The tilting action would be present, but it would be on a different part of the cutter.

Q. 234. On what part of the cutter would it be in such case?

A. It would be wholly upon the— No. Let me hear that question again. (The question is read by the notary.) No. The last part of that answer is wrong. It would be across the back of what remains of the cutter body after removing the extended shoulders.

Q. 235. And it would be the same tilting action, would it not?

A. It would be the same tilting action.

Q. 236. Then whether or not the inward thrust-bearing of the cutters of the Double improved reamer are extended laterally beyond the width of the shank of the cutter, has no effect whatever upon the presence or absence or the location, longitudinally of the cutter, of such tilting action, has it? [160]

A. The tilting action would be there, but the fulcrum would be shifted.

(Deposition of Elihu C. Wilson.)

Q. 237. How would the fulcrum be shifted?

A. No. I am wrong. The tilting action would be there, but the strain would be confined to a smaller volume of metal than previously, on the improved Double underreamer-cutter.

Q. 238. You stated this morning that the old style Double underreamer has for its spreading-means, which means are on the body and hollow-slotted extension or stationary wall or partition, which stationary wall or partition lies between the dovetail grooves or retaining members, which form ways for the cutters. That is true, and in the same sense with respect to the so-called improved Double underreamer, is it?

A. In the improved Double underreamer body that portion of the body known as the hollow-slotted extension, and which portion lies between the dovetail grooves of the body, forms only a portion of the expansion means or bearings.

Q. 239. When you speak of the "expansion means" in your last answer, you refer to the two inclined surfaces at the end of the body of the reamer, do you?

A. Yes; and also that part which extends laterally from the hollow-slotted extension to the periphery of the body.

Q. 240. Upon which the tilting action, to which we have just been referring, takes place? Is that it?

Mr. BLAKESLEE.—Objected to as indefinite which part of the structure is meant.

A. The tilting takes place on the improved Double

(Deposition of Elihu C. Wilson.)

underreamer body the full width of the body of the cutter, and that means that the extended bearings which are formed by the V-shaped grooves at the lower end of the reamer body also form a portion of the fulcrum or pivotal point.

Q. 241. (By Mr. LYON.)—The other portion of such fulcrum [161] or pivotal point, as you call it, is formed by the metal which lies directly within the open side slots and dovetailed ways of the body? Is that correct?

A. That forms another part of the spreading-bearings; yes, sir.

Q. 242. And so far as this tilting action is concerned, and in this question I am referring to such tilting action solely, the improved Double underreamer body in this respect simply contains a wider bearing on which this tilting action may take place? Is that correct?

A. The wider or extended bearing serves more purposes than the tilting action or fulcrum point of the cutters.

Q. 243. Will you please now answer the previous question yes or no.

Mr. BLAKESLEE.—Reread the question. (The notary reads the question, No. 242.)

A. That is correct with respect to the tilting action only, yes, sir.

(By request of counsel the answer of the witness to question No. 242 is read.)

Q. 244. (By Mr. LYON.) What other purposes does that wider bearing serve in the Double im-

(Deposition of Elihu C. Wilson.)

proved reamer, so called?

Mr. BLAKESLEE.—Objected to as mere repetition of the previous testimony several times given.

A. I have repeatedly stated that by the V-shaped grooves at the sides of the reamer-body which extends the face of the parallel bearing-faces of the hollow-slotted extension longitudinally out through the periphery of the reamer body, the projection of the reamer body is formed, which extends downwardly to form bearings which appear at the backs of the cutters of the improved Double underreamer. This forms a broader bearing, giving more surface, and an extended bearing which better braces [162] the cutters against the rotation action within the dovetail means and on an axis of a vertical line through the cutters, and also transfers the fulcrum or pivotal point on which the cutter teeters when collapsing, from the shank of the cutter to the body of the cutter, thereby overcoming one of the weaknesses of the old style Double underreamer cutters. It enables the use of broader cutters and it enables the use of a greater bulk of material in the cutters, producing longer life of cutters and greater strength.

Q. 245. (By Mr. LYON.) This morning you testified that in the old styled, so called, Double underreamer, the lower end of the hollow-slotted extension terminated in a V-shaped wedge, the faces of the hollow-slotted extension, except those at the extreme lower end, being parallel. That is true also of the so-called improved or new style Double underreamer, is it not? A. Yes, sir.

(Deposition of Elihu C. Wilson.)

Q. 246. And in the same answer you stated that in such old style Double underreamer, in addition to the means before referred to, the above mentioned grooves or ways for the cutters are inclined downwardly and outwardly. That is to say, the dove-tail grooves or retaining ways of the cutters. And you also said that the combination of the features just mentioned produced the expansion of the cutters. Those features are present and in the same relation in the so-called improved or new style Double underreamer, are they?

A. They are present, but the action occurs in a different ratio or different degree, one compared with the other.

Q. 247. How much difference in degree is there?

A. I don't know. It is a difficult matter to figure. You could probably lay it out on a drawing board and determine.

Q. 248. The principle of action of the parts is the same in the two reamers? [163]

A. The principles of expansion are not altogether the same.

Q. 249. Explain each and every difference that you think there exists in that regard between the so-called old style Double reamer and the so-called improved Double reamer.

A. That question has been answered by exactly the same reply that I would try to give again.

Q. 250. Please state it again so that we may have it directly before us.

Mr. BLAKESLEE.—We object to amplifying the

(Deposition of Elihu C. Wilson.)

record by placing upon it answers which cannot be different from those previously given. The whole record is before us as fast as it can be reduced by machine impressions, and I cannot see the advantage of getting it before us at every session identically as taken at a previous session. This has been gone into exhaustively before—this same matter.

A. I have repeatedly explained that with the old style Double underreamer there was no means provided below the dovetails, or upwardly and inwardly inclined grooves or dovetailed ways, to form bearings between the bodies of the cutters; nor was there any means provided for a bearing laterally or beyond the space bounded by the inner walls of the dovetailed ways of the body. The pivoting or fulcrum point was confined between the walls of the two dovetailed ways on either side of the body of the old style Double underreamer. The corresponding bearing-faces on the cutters, and which coact with the spreading-bearings of the old style Double underreamer, were located at the backs of the shanks of the cutters. The pivotal point at the backs of the shanks of the cutters was at the extreme lower end of this bearing referred to and which formed no part of the cutter body itself. I have endeavored to explain repeatedly that when the cutters of the Double underreamer, both old style and new style, [164] have finally ridden up to the extreme faces of the V-shaped wedge at the bottom of the body, and rest on the parallel bearing-faces of the hollow-slotted extension, there is still a contracting or an expand-

(Deposition of Elihu C. Wilson.)

ing motion of the cutter, depending on the upward or downward movement of the same, over the spreading-bearing, due to the angular dovetail grooves on the body, and the cutter following them. Now, with the improved style Double under-reamer the lateral bearings or extensions of the faces of the hollow-slotted extension, coact with the corresponding bearings on the backs of the body of the cutters of the improved style Double underreamer. Therefore, the entire bearing-face formed not only by the extension or projection of the hollow-slotted extension and by the V-shaped groove comes in contact with the corresponding bearings at the back of the cutters, and all of that bearing plays a part when the cutters expand or contract. With the old style Double underreamer this cannot be said, for the reason there are no V-shaped grooves in that style of reamer, no lateral extensions of the parallel bearing-faces of the hollow-slotted extension, no corresponding bearings on the projecting shoulders of the cutter, and consequently the action is different.

Q. 251. (By Mr. LYON.) Is it your understanding of the so-called improved Double under-reamer that the V-shaped grooves formed at the bottom of the body portion play a part in the expansion or contraction of the bits?

A. The V-shaped grooves themselves are only a means to produce this projected bearing or extension of the hollow-slotted body, which projection extends downward, to contact with the cutters below

(Deposition of Elihu C. Wilson.)

the shanks of the cutters. The groove itself is merely the result of that form of construction and, so far the groove itself is concerned, it might be V-shaped or be at right angles. [165]

Q. 252. In your last answer you have stated that in both the so-called old style and so-called improved or new style Double reamer, that after the cutters of the Double underreamer, both old style and new style, have finally ridden up to the extreme faces of the V-shaped wedge at the bottom of the body and rest on the parallel bearing-faces of the hollow-slotted extension, there is still a contracting and expanding motion of the cutter, depending on the upward or downward movement of the same over the spreading-bearing, due to the angular dovetail grooves on the body and the cutter following them. That is the tilting action to which you have referred heretofore, is it? A. It is.

Q. 253. Then the principle of action of the Double reamer, either old style or new style, in expansion or contraction is a compound action, having, first, a spread due to the cutters being drawn over a wedge, and then a tilting action? Is that your understanding of the principle of such action of such Double underreamers in that regard?

A. The expansion and contraction of the Double underreamer-cutters is produced by a combination of means.

Q. 254. And this combined action is the combination set forth in my last preceding question? Is that correct?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The witness has several times testified all the way through from start to finish as to both the collapsing and expanding action of the cutters of the Double reamers. It does not seem to be the proper method of cross-examination for counsel to state certain answers which he manifestly wishes to obtain and then get the witness to adopt his questions as answers, particularly when the witness has answered fully as to such matters.

A. The combination I refer to is the tilting action of the cutters over the hollow-slotted extension, in the case of [166] the old styled reamer, together with the inward or outward throw of the upper ends of the shanks of the cutters when following the dovetail grooves or ways, and in the improved styled underreamer the combination is that of the cutter sliding up over the spreading-bearing at the end of the hollow-slotted extension and also over the same bearings which extend laterally to the periphery of the underreamer body, and coming in contact with corresponding bearings at the backs of the cutters, and also by the inward or outward throw of the shanks of the cutters when following the inclined dovetailed ways.

Q. 255. (By Mr. LYON.)—Now, please answer the last question yes or no.

A. (The question having been read.) I believe the cutters have the tilting action at the same time that they are being drawn over the wedge, and consequently your description of the action is not quite correct, in my opinion.

(Deposition of Elihu C. Wilson.)

Q. 256. It is a combination or compound action of these two just specified by you, is it?

A. I think the two actions take place at one and the same time to a certain degree, or during a certain part, at least, of the expansion or contraction of the cutters.

Q. 257. It is a compound action consisting either coincidentally or successively, of these two actions? Is that correct?

A. Yes, sir; I think I am safe in saying that is a fact.

Q. 258. Now, in the underreamer shown in the drawings and described in the specifications of Complainant's Exhibit Wilson Patent, is the principle of expansion of such reamer in a combination or compound action of such tilting and wedge action, either simultaneous or successive?

A. I have explained before that the only means provided [167] for expanding the cutters of the Wilson underreamer is the wedge shaped lugs or projections which form the extreme lower ends of the prongs of the reamer-body, namely, that portion of the prongs which extend downward below the lower ends of the dovetail shoulders, and which are designated in the patent as 2'. As the shanks of the cutters practically remain stationary on their suspension means during the expansion or contraction of the cutters, there is no chance whatever to produce the teetering action referred to in describing the old style Double underreamer.

Q. 259. Now, having explained, please answer the

(Deposition of Elihu C. Wilson.)

last question yes or no. (Question No. 258 is read.)

A. Therefore, it will be clear that the expansion and contraction of the Wilson underreamer-cutter is not a combination of the tilting action or teetering action and the expansion due to a wedge being interposed between the cutters.

Q. 260. The expansion of the Wilson underreamer then is due solely to the sliding of the bits up a wedge? Is that correct? A. That is correct.

Q. 261. What is the purpose in the Wilson underreamer of providing the dovetails upon the body and upon the cutters?

Mr. BLAKESLEE.—We object to the use of the term “dovetail” in this question as not following the previous testimony or the patent.

A. The dovetailed shoulders or projections which form retaining means for the cutters and the corresponding shoulders of the shanks of the cutters are simply means for retaining the cutters firmly in position in the reamer body. They are simply a retaining means.

Q. 262. (By Mr. LYON.) Against what do they retain the cutters in the body? [168]

A. Against the outward tendency or strain, namely, that strain which has a tendency to pry the upper end of the shanks outwardly or to pry the cutter outwardly from the body.

Q. 263. At the time this suit was filed by you against the Union Tool Company, a suit was pending in this court by the Union Tool Company et al., complainants, against the Wilson & Willard Manu-

(Deposition of Elihu C. Wilson.)

facturing Company for infringement of letters patent of the United States grantor to Edward Double, No. 734,833, dated July 28, 1903, by reason of the manufacture of the underreamers not only like the drawings and description of the specifications of Complainant's Exhibit Wilson Patent, being letters patent of the United States No. 827,595, but also like Complainant's Exhibit Wilson Underreamer here in evidence? Is that correct?

A. Yes, sir; that is correct, granting that the dates and numbers you gave are correct.

Q. 264. You have verified the dates and numbers?

A. I have verified the numbers of the reamers—Did you give the date that that suit was filed?

Mr. BLAKESLEE.—No; only the date of the patent.

A. Yes; that is correct.

Q. 265. (By Mr. LYON.) And at the time of filing this suit you were engaged in assisting, as president of the Wilson & Willard Manufacturing Company and as the owner of one-half of the capital stock thereof, in the defense of such suit and in giving evidence on behalf of the defendant therein? Is that correct?

A. Yes, sir; with the exception of a correction that I might make that I owned substantially one-half of the stock.

Q. 266. How long had you been familiar with the letters patent of the United States No. 734,833 issued to Edward Double, before you built your first underreamer like Complainant's Exhibit Wilson Patent, letters patent 827,595?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—Objected to as irrelevant, incompetent and immaterial, not cross-examination. The Double patent has [169] nothing to do with the issues in this case, although it may have had considerable to do with the issues if the other suit referred to, and which are not yet determined. Present issue concerns the production of the defendant, irrespective of what relation there may be between those reamers and the said patent.

A. I believe the first Wilson underreamer was built before I ever saw the Double underreamer patent or knew what it claimed.

Q. 267. (By Mr. LYON.) Prior to your building the first reamer like Complainant's Exhibit Wilson Patent or having a full conception of such a reamer, is it a fact that you were familiar with the Double underreamer built in substantial accordance with Double Patent No. 734,833?

Mr. BLAKESLEE.—The same objection, and the further objection that it is not cross-examination, irrelevant, immaterial and incompetent. There has been no foundation laid in this case so far relating to the Double patent.

A. Yes, sir; I was more or less familiar with it.

Q. 268. (By Mr. LYON.) You had seen such reamers in the oil fields? A. I had.

Q. 269. I now show you letters patent of the United States No. 683,352, issued September 24, 1901, to J. C. Swan, and ask you if you had ever seen a reamer built in substantial accordance with the drawings and specifications of that patent prior to

(Deposition of Elihu C. Wilson.)

the time when you built your first reamer illustrated and described in Complainant's Exhibit Wilson Patent, or had a full conception of such Wilson reamer?

Mr. BLAKESLEE.—Objected to as irrelevant, immaterial, incompetent, not cross-examination, and as calling for a mere conclusion. The direct examination has only referred to the Swan underreamer and not in any place to the Swan patent. [170]

A. I had seen Swan underreamers; yes, sir.

Q. 270. (By Mr. LYON.) Built substantially in accordance with the patent that I have just mentioned?

Mr. BLAKESLEE.—The same objections.

A. Yes, sir; I believe they were very much like that.

Q. 271. (By Mr. LYON.) Now, with particular regard to the bits or cutters shown in this said Swan patent No. 683,352, did the Swan reamers which you were so familiar with prior to the building of the first Wilson underreamer or the completion thereof by you as above specified by me, contain and embrace cutters or bits constructed in substantial accordance with the drawings of this patent and its description?

Mr. BLAKESLEE.—The same objection, and the further objection is made that this is not a proper method of presenting any defense in this case, and notice of motion is given to strike out from the record all such irrelevant, immaterial and incompetent testimony as may flow from this line of questioning,

(Deposition of Elihu C. Wilson.)

and counsel is again cautioned to confine his inquiries to cross-examination.

Mr. LYON.—The witness on direct examination referred to certain reamers with which he was familiar prior to the building of the first so-called Wilson reamer, and I propose to show what those reamers were.

Mr. BLAKESLEE.—If counsel wishes to produce those reamers for identification by the witness, or to get the witness to describe them, I suppose that would be cross-examination. But the Swan patent is not a proper subject of cross-examination.

(The question is read by the rotary.)

A. The Swan underreamer which had come to my notice before I made the first Wilson underreamer or had the first Wilson underreamer made, was in the shop of the Baker Iron Works of this city, and to the best of my recollection those cutters [171] differed from these.

Q. 272. (By Mr. LYON.) In what way did they differ?

A. I am quite sure that those cutters were virtually formed in two pieces. One was a block which fitted into the dovetailed ways of the hollow-slotted extension of this Swan reamer, and it had dovetailed means for fastening the cutters into this block, and that does not seem to appear on this drawing of the Swan underreamer and patent.

Q. 273. Otherwise than as the cutters were made in two pieces, did their general outline and shape and configuration and manner of operation in the

(Deposition of Elihu C. Wilson.)

body portion of the Swan underreamer, conform substantially to the drawings and specifications of this Swan patent to which I have just referred?

Mr. BLAKESLEE.—The same objection.

A. As to the exact shape of the cutter or piece which fitted into the movable or traveling block, as I remember the construction of that reamer, I am not in a position to say. But I can testify that the cutter when it was combined of the two pieces traveled on these inclined ways as it expanded or contracted substantially the same as shown in this drawing.

Q. 274. (By Mr. LYON.) It is a fact, is it, that as early as 1903 you had in your possession a copy of this Swan patent No. 683,352?

Mr. BLAKESLEE.—The same objections.

A. No, sir; I am not sure that I saw that patent at that date.

Q. 275. (By Mr. LYON.) Did you not secure a copy thereof from me in the office of Townsend Brothers in the Bradbury Block, in the city of Los Angeles, either in June or July, 1903, at the time when you brought up a model of an underreamer and showed it to me there?

Mr. BLAKESLEE.—The same objection. [172]

A. No, sir. I don't remember that I obtained any patents from you.

Q. 276. (By Mr. LYON.) Do you testify positively that you did not?

A. I have positively no recollection of getting a patent from you or a copy of a patent.

(Deposition of Elihu C. Wilson.)

Q. 277. Did you secure in 1903 copies of any underreamer patents?

Mr. BLAKESLEE.—The same objection.

A. I can't say definitely that I did.

Q. 278. (By Mr. LYON.) Can you say that you did not?

Mr. BLAKESLEE.—The same objections.

A. At that time I cannot remember that I was as much concerned in patents as I was in perfecting an underreamer, and I do not remember obtaining copies of the patents at that time.

Q. 279. (By Mr. LYON.) What other reamers besides the Double reamer and the Swan reamer had you seen prior to the time when you built your first reamer like Complainant's Exhibit Wilson Patent, or had worked out such reamer in your mind?

A. I had seen the Austrian reamer which we were then manufacturing, or, rather, which the Baker Iron Works was then manufacturing; I think I had seen the Plotts underreamer; I had seen the Kellerman underreamer, and I had seen the North underreamer. I had seen a reamer made by a man by the name of Joe Magney which was made in the shops of the Baker Iron Works, and I had seen a reamer that was made for a man who was then operating in the Los Angeles oil fields, but whose name I have now forgotten. These reamers were made by the Baker Iron Works and were used in the Los Angeles oil field. I also saw a reamer made by Arthur Willard or made for him in the shop of the Baker Iron Works, which reamer was a moveable-wedge proposi-

(Deposition of Elihu C. Wilson.)

tion with the cutters suspended on stationary pins, and I think I saw the O'Donnell & Willard reamer. I think that is about the amount of [173] reamers that I had seen.

Q. 280. Hadn't you prior to that time seen the so-called National reamer which was turned out by E. E. Mills in the National Supply Company of Los Angeles?

A. Yes; I had seen that, and I also saw a reamer made for a man named Swan who was a different Swan from the J. C. Swan of the patent. That man was at that time co-operating with the American Steel & Wire Company of this city.

Q. 281. I show you letters patent of the United States No. 674,793, dated May 21, 1901, to Edward North of Los Angeles, California, for underreamers, and ask you to examine the same and state whether the North reamer to which you have just referred was built in substantial accordance with the drawings and specifications of this patent, having particular relation to bits and cutters.

Mr. BLAKESLEE.—The same objection as last previously noted.

A. There is a lot of mechanism in regard to the trip action and setting of this reamer that I am not in a position to say is exactly the same, for I had never seen the interior parts of the North reamer. But I know the cutters were suspended in about the same manner, and, in a general way, this reamer seems to be about the same as the actual reamer that I saw.

Q. 282. (By Mr. LYON.) I also show you a

(Deposition of Elihu C. Wilson.)

copy of letters patent No. 679,384, dated July 30, 1901, to John M. Kellerman of Los Angeles, California, for underreamers, and ask you similarly with respect to the same to state whether the Kellerman reamers which you referred to were built in substantial conformity with the specifications and drawings of these letters patent, particularly with reference to the bits and surfaces coacting with the bits in expansion and contraction.

Mr. BLAKESLEE.—The same objection. [174]

A. So far as the bits and spreading-means are concerned. I think they are practically the same.

Q. 283. (By Mr. LYON.) I likewise show you letters patent of the United States No. 762,435, dated June 14, 1904, issued to James A. O'Donnell and Arthur G. Willard, of Los Angeles, California, for underreamers, and similarly ask you to inspect the drawings and specifications thereof and state whether or not the O'Donnell and Willard reamer which you state you were familiar with was constructed in substantial accordance with the drawings and specifications of this patent, particularly in so far as the bits or cutters and the coacting surfaces in expansion and contraction are concerned?

Mr. BLAKESLEE.—The same objection.

A. With the exception of the features for apparently locking the cutters up into place and probably a few minor features there, this is substantially the same.

Q. 284. (By Mr. LYON.) In your last answer you refer to the bolt 16, spring-holding plug 19, and

(Deposition of Elihu C. Wilson.)

the associated locking device, do you?

A. Yes. Those are the parts. I do not believe they appeared on the reamer,—on the O'Donnell and Willard reamer I saw.

Q. 285. But the bits were like the bits on the drawing of this patent?

Mr. BLAKESLEE.—The same objections.

A. I think in a general way I can say that the cutters are the same. I don't know as the portions are absolutely in the form of construction, but they resembled those cutters.

Q. 286. (By Mr. LYON.) When were you employed at the Baker Iron Works at Los Angeles, California?

A. From the year 1897 to the year 1904.

Q. 287. During the year 1903 did you meet a man by the [175] name of Alexander Cummings at the Baker Iron Works?

Mr. BLAKESLEE.—Objected to as not cross-examination, irrelevant, immaterial, incompetent, and no foundation laid for the inquiry.

A. I did not.

Q. 288. (By Mr. LYON.) Did not said Alexander Cummings at the Baker Iron Works in Los Angeles, California, during the year 1903, show you a wooden model of an underreamer?

Mr. BLAKESLEE.—The same objection.

A. He did not.

Q. 289. (By Mr. LYON.) You know the Alexander Cummings to whom I refer, do you?

A. The first time I ever saw or heard of him was

(Deposition of Elihu C. Wilson.)
after my underreamer was in use.

(An adjournment is now taken by consent of counsel until to-morrow, Friday, March 27, 1914, at 10 o'clock A. M., at the same place.)

Friday, March 27, 1914,
10 o'clock A. M.

This being the time and place to which the further taking of proofs in this cause was continued, the proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Mr. BLAKESLEE. — Complainant's counsel wishes to again object to the extension of cross-examination or purported cross-examination along the lines as to which repeated objections have been urged; and particularly when such purported cross-examination invades the field of defense. Counsel must understand that this is not the proper time for him to put in the defense in [176] this suit. Repeated objections have been recorded to the questioning of this witness with respect to the O'Donnell and Willard patent and some O'Donnell and Willard reamer, and also the same objection has been urged against informal discussion of those patents. In this connection it is to be noted that the defendant's answer sets up the said O'Donnell and Willard patent, as to which the witness was interrogated yesterday, and also set up certain acts by one Thomas A. O'Donnell and one Arthur G. Willard, or certain knowl-

edge and use by them, purporting to be pertinent to the patent in suit. It is entirely improper for counsel for the defendant to present these matters at this time. To do so puts counsel for complainant in the position of either cross-examining his own witness, as to which it is believed counsel for the defendant would vigorously object, or to complainant's counsel examining his own witnesses in redirect after the bolt has been shot by counsel for complainant in direct. If counsel wishes to interrogate the present witness along these lines or any other witnesses along these lines, he is open to his procedure to produce them, by subpoena if necessary, and counsel for complainant will then have proper opportunity to cross-examine such witnesses as to such matters of defense in the proper manner and in the manner in which he is entitled to take up such evidence. This objection is more or less an echo of an objection made by counsel for the defendant, then counsel for complainant, in another suit concerning underreamers which the present witness has admitted to be now pending between the defendant in this action and others and Wilson & Willard Manufacturing Company, at which, at least at the time of taking proofs in said other suit, the present witness was present. During the examination of the witness Double, president of the complainant corporation in that suit and the defendant corporation in the present suit, the same O'Donnell and Willard letters patent were submitted to the witness Double, and [177] counsel for defendant, then counsel for complainants, objected as

follows (page 83 of the record in the case), pertinent to question 61: "Mr. LYON.—We object to that on the ground that it is not cross-examination." We propose to continue the taking of testimony in this case at such times and places as we elect, that is, such testimony as we take for complainant, and we refuse to leave this room this morning or at any other time unless it so pleases us to repair to any other place for the purpose of taking testimony for complainant. If counsel for defendant has testimony and evidence to adduce as to which he thinks the present witness may have something to say, he will, of course, have the proper opportunity to so produce in taking proofs for the defendant. Under stipulation the testimony is being taken out of court in this case and no reason is known for repairing to the Federal Building, as at this time is proposed by defendant. If counsel wishes an opportunity to repair to the Federal Building for the purpose of any inspection, we will be glad to accord him the opportunity by suitable adjournment or suspension of proceedings, but the notary, the witness and counsel for complainant will not accompany him. We believe that it is so clear a case of attempting to build up defendant's case in cross-examination by producing evidence solely pertinent to the defenses set up in the answer, if pertinent at all, that there can be no possible course open to us than to refuse as above to assist in any such informal proceeding, and to sacrifice the proper advantages to be reserved to complainant to cross-examine any such witnesses as may be produced in connection with the

offer of evidence under the answer on behalf of the defendant. And we again reiterate our objection to the continuation to the cross-examination which has already been unnecessarily protracted and which has so extensively dealt with matters purely of defense, if pertinent at all, not germane or responsive to the direct explanation of this witness. [178]

Mr. LYON.—This statement of counsel is objected to as argumentative and, therefore, a violation of the rules in equity which require that objections shall be stated without argument. As counsel for complainant is violating such rule, and as complainant is paying the cost of such violation at the present time, I will answer such argument solely to the extent of stating that the facts and circumstances of the attempt to interrogate Mr. Double, when called as a witness on behalf of the defendants in the suit pending between the Union Tool Company, Edward Double et al., as complainants, against the Wilson & Willard Manufacturing Company, Defendant, for infringement of the Double patent, referred to by the witness Elihu C. Wilson in his testimony in this case, stood upon an entirely different footing than the cross-examination in this case so objected to by counsel for complainant. In the case referred to Mr. Double had in no wise referred to any prior underreamers existent before his invention, nor was there anything in his direct examination to indicate that he had any knowledge or ever had any knowledge of the so-called O'Donnell and Willard patent or alleged underreamer prior to his invention. The matter objected to there, therefore,

was clearly not cross-examination. On the other hand, when the present witness, at the instigation of counsel for complainant, has brought out the fact that he was prior to the alleged invention of the device exhibit Wilson Patent, familiar with many other reamers. In his answers he has named some of them and stated that there were many others. The defendant insists, therefore, that he has a right to cross-examine the witness as to such knowledge to fully show the facts, and that the cross-examination is germane to the direct examination of the witness. The request is now made of the notary to adjourn the proceeding to the basement of the Federal Building in this city where the exhibits in the action of the Union Tool Company et al. vs. Wilson & Willard Manufacturing Company are stored, that the witness may identify [179] certain of said exhibits and that the same may be offered in evidence here in this proceeding. Such exhibits are on file as a part of the court records in said prior suit and weigh respectively from 900 pounds each to 150 or 200 pounds each, and it is simply for the convenience of the parties and to avoid delay that this request is made.

Mr. BLAKESLEE.—We must disagree somewhat with counsel's statement as to the want of analogy between the Double witness situation and the Wilson witness situation. The record in the other suit referred to shows on page 82 that the—

Mr. LYON.—Just a moment. We object to counsel under the guise of an objection testifying in the case and any statement that he makes as to what the

record in said case shows *in* objected to as incompetent and not the best evidence, and is irrelevant, incompetent and immaterial in this case.

Mr. BLAKESLEE.—This statement is made wholly as responsive to counsel's statement. On page 82 of that record the witness was asked as to certain prior underreamers and testified that they were in use prior to the production of the Double underreamer, and that testimony was brought out before the question was put as to the O'Donnell and Willard reamer patent. Furthermore, we must again call counsel's attention to the fact that the record and examination on direct of this witness did not go into the question of reamers in general, but the question related to reamers that were on the market prior to the production of the Wilson reamer. We contend that this does not open the door for cross-examination as to every old kind of underreamer that may or may not have been used by somebody—Cumings or anybody else—irrespective of whether they were standardized commercial products. And we must instruct the notary, insofar as these proceedings are concerned, that we propose to continue our taking of proofs here without any adjournment at this time [180] and without repairing to the Federal Building for the purposes of the request. So that counsel may continue the proper cross-examination of this witness or we shall be forced to call another witness.

Mr. LYON.—Passing the above question for the time being, I will now proceed with the cross-examination of the witness.

(Deposition of Elihu C. Wilson.)

ELIHU C. WILSON, complainant, called as a witness in his own behalf, testified as follows:

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 290. Mr. Wilson, on November 18, 1912, you were sworn as a witness on behalf of the defendant Wilson & Willard Manufacturing Company, in the suit referred to by you as pending in this court wherein the Union Tool Company et al. are complainants, and the said Wilson & Willard Manufacturing Company is defendant, involving the alleged infringement by the Wilson & Willard Manufacturing Company of the Double underreamer patent, were you? A. Yes, sir.

Q. 291. On direct examination you were asked the following question in that case: "Q. 44. Did you at that time know of the issuance of U. S. Letters Patent No. 762,435, for underreamers and drills, granted to O'Donnell & Willard June 14, 1904?" And answered: "A. I didn't know of the patent. I knew of the tool they made." You were asked that question and gave that answer at that time, did you?

Mr. BLAKESLEE.—We again object to this as not cross-examination.

A. Yes, sir; I believe that is correct.

Q. 292. (By Mr. LYON.) On the same date and in the same [181] testimony you were asked on your direct examination: "Q. 42. During the development of your invention, did you or did you not have before you other sources of information to assist you in determining the state of the art of underream-

(Deposition of Elihu C. Wilson.)

ing at that time?" and you answered: "A. The sources of information I had were through catalogs and through the tools which were in actual use; also through information I received and gathered from oil-well men who were using underreamers." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. I believe that is correct.

Q. 293. (By Mr. LYON.) Reading further from your deposition in that case as follows: "Q. 45. Did you or did you not, at the times last referred to, number among your acquaintances either of the patentees of said letters patent No. 762,435? A. Yes, sir; I knew them both. Q. 46. Had they or had they not, at or prior to such times, brought to your attention anything relating to the subject of said letters patent No. 762,435? A. Mr. Willard informed me that they had applied for patents on that underreamer. Q. 47. (By Mr. BLAKESLEE.) Please state what, if anything, came to your notice in any manner, at the times referred to, with respect to this patent 762,435 and the subject thereof? A. Well, I was informed by Mr. Willard that he and Mr. O'Donnell had applied for patents on the underreamer which they were trying out. I believe the first underreamer they had made was made somewhere in the East. At the time that reamer was shipped out and tried I was not giving much attention to underreamers not oil-well tools in any way. I think I was acting as bookkeeper for the Baker Iron Works at that time and in that capacity didn't come in contact with

(Deposition of Elihu C. Wilson.)

the use of the tools. Q. 48. (By Mr. BLAKESLEE.) Did you, at the times mentioned, namely, when you were developing your invention referred to, know anything about the shipping out of the [182] underreamer to which you have referred? A. No, sir. There was nothing that came to my notice. Q. 51. (By Mr. BLAKESLEE.) Have you examined the Willard & O'Donnell underreamer introduced in the course of these proceedings by defendant? A. I have. Q. 52. Will you please now compare or contrast that underreamer with the underreamer patented by you, as testified? A. Compare the O'Donnell & Willard underreamer with the Wilson underreamer? Q. 53. Yes. A. The O'Donnell & Willard underreamer differs from the Wilson underreamer, in that it has for its spreading-bearings an extension or wedge-shaped partition, which is hollow, to receive a spring or spring actuated key or T-rod, and it has a slot in it, through which slot the key or T operates vertically as the slips or cutters are drawn up or down, as the case may be, when in operation. The O'Donnell & Willard underreamer has tapering pockets into which the cutters fit. The cutters differ from those of the Wilson underreamer, in that they have only one bearing-face which strikes against the spreading-wall or hollow slotted extension. The cutters of the O'Donnell & Willard underreamer take their thrust-bearing on the upper face of an annular shoulder on the cutters, also a portion of the thrust is taken at the upper end of the cutter, while with the Wilson underreamers the thrust-

(Deposition of Elihu C. Wilson.)

bearing is taken at the upper end of the shank of the cutter only. The O'Donnell & Willard underreamer retains its spring in place by means of this hollow slotted extension, which is itself detachable, which serves the purpose of the spreading-bearing for the cutters, also as a seat for the spring, and, furthermore, as a guide for the spring actuated rod and key. The Wilson underreamer differs from the O'Donnell & Willard underreamer in several very material points: First, that the expansion of the cutters is accomplished in an entirely different way. Instead of having a hollow slotted extension or spreading-bearing for expanding the [183] cutters, it has two prongs or extensions of projections which extend down from the lower end of the body. These prongs have retaining shoulders on the inner walls of same and the lower ends of the two prongs terminate in wedge-like projections which themselves form the spreading means for the cutters and also serve as the bearings for the cutters when the cutters are expanded in the reaming position, thus holding the cutters firmly in reaming position. The spring and T of the Wilson reamer are suspended in place by means of a collar, which collar was in turn held in place in the reamer body by means of dowelpins or screws. Unlike the O'Donnell & Willard underreamer, there was no portion or part of the reamer body itself interposed between the cutters when the cutters themselves were collapsed, ready to run into the casing, while with the O'Donnell & Willard underreamer, the hollow slotted extension still re-

(Deposition of Elihu C. Wilson.)

mained between the two cutters when the cutters were collapsed in position, for running into the casing. The cutters of the O'Donnell & Willard underreamer, after being drawn downward compressing the spring to do so, tilted over this hollow slotted extension, closing them together; but with the Wilson underreamer the cutters collapse by simply drawing them down until the shoulders of the cutters were below the spreading-bearings or extensions, which are the lower terminations of the forks of the reamer body. The cutters do not actually tilt over any bearings or any stock of the reamer body interposed between the cutters. In this way its collapsing action differed very materially from that of the O'Donnell & Willard underreamer. When the cutters were drawn down in their collapsible position, there was no material in the reamer body over which they could tilt, as they were below any such stock. The Wilson underreamer has no feature in its construction whatever which in any way resembles this hollow slotted extension or stationary wedge used by the O'Donnell & Willard underreamer. The space occupied by this wedge or hollow slotted extension in the O'Donnell & Willard underreamer is an open [184] cavity in the Wilson underreamer; there is no material there at all. In fact, that open cavity here would be the space between the two forks of the Wilson underreamer. Another thing, the Wilson underreamer employs a bolt or pin which extends across the mouth of the underreamer, extending from one prong to the other and which acts as a safeguard against the

(Deposition of Elihu C. Wilson.)

loss of cutters should the T to which the cutters are attached be broken. There is absolutely nothing like that device on any other reamer, particularly not on the O'Donnel & Willard underreamer. The Wilson underreamer cutter has an enlarged body which forms shoulders extending at right angles to the shank of the cutter. These shoulders are so shaped that they ride on these wedge-like extensions or projections of the prongs, and when the cutters are collapsed together, they are held in that position largely by these shoulders resting or bearing against the beveled ends of these wedge-like projections. There is no similar device on the O'Donnel & Willard underreamer. There are other minor differences but, in the main, those are the chief differences between the O'Donnell & Willard underreamer and the Wilson underreamer. I might add that the body of the Wilson underreamer is one single piece; it has no middle joint in it."

The questions which I have just quoted were asked you and the answers which I have just quoted were given by you to such questions in the said deposition in the said case, were they, and I have read a correct statement of such questions and answers?

Mr. BLAKESLEE.—We again object to this question as not cross-examination, no foundation being laid in the direct examination of this witness for any such course of inquiry, and it is therefore irrelevant, immaterial and incompetent, and is unnecessarily further incumbering the record. We must repeat our notice of a motion to tax to the defendant the

(Deposition of Elihu C. Wilson.)

cost of taking and returning these extended portions of his deposition which are contended to be improper. As to counsel's previous objection that remarks [185] of counsel for complainant are argumentative in places, it is only desirable to sufficiently and fully state the grounds of the objection as is demanded in accordance with Equity Rule No. 51.

A. I believe so; yes, sir.

Q. 294. (By Mr. LYON.) When you say in your last answer you believe that is the case, you know that such is the case, do you?

Mr. BLAKESLEE.—The witness has not had an opportunity with his own eyes to compare the question with the record in the other case, but we are perfectly willing to concede that the witness so testified.

A. I do.

Q. 295. (By Mr. LYON.) In giving your testimony in said case of the Union Tool Company against Wilson & Willard Manufacturing Company you were asked the following questions and gave the following answers: "Q. 54. You have testified as to certain desired features of improvement which actuated you in the development of your invention of the subject of 'Defendant's Exhibit Wilson Underreamer Patent.' Please state whether or not you find any such features disclosed in 'Defendant's Exhibit Willard & O'Donnell Patent.' A. Yes, sir; the same objections would hold good in a number of instances. For instance, the cutters of the O'Donnell

(Deposition of Elihu C. Wilson.)

& Willard did not have sufficient expansion— Q. 55. Let me interrupt for the purpose of obtaining a responsive answer and call your attention again to the question, which I will ask the reporter to re-read. (Last question read by the Special Examiner.) A. You mean to say whether the O'Donnell & Willard patent overcame the objections to the other? Q. 56. That is in substance what I mean. In other words, I wish you to state whether the underreamer disclosed in the Willard & O'Donnell patent furnishes and supplies any of the features of improvemetnt which you sought [186] to establish in the working out of your patented invention. A. About the only features it disclosed is the extreme width of the cutters. Its cutters were very broad, thus reaming a large portion or segment of the hole at each stroke of the tools. Q. 57. Please answer, similarly, with respect to the underreamer 'Defendant's Exhibit Willard & O'Donnell underreamer.' A. Well, it is evident from a glance at that reamer that its cutters were very broad and that it will overcome at least one of the faults of other underreamers in use at that time by having broad cutters instead of narrow ones." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir; that is correct.

Mr. LYON.—In connection with the cross-examination of this witness we offer in evidence the underreamer referred to in question 57 of this witness's deposition in the said action of the Union Tool Company et al. vs. Wilson & Willard Manufacturing

(Deposition of Elihu C. Wilson.)

Company, and identified by this witness in his said deposition in that case and marked therein "Defendant's Exhibit Willard & O'Donnell Underreamer," and ask that the same be marked "Defendant's Exhibit Willard & O'Donnell Underreamer," the same being now in the possession of the clerk of this court.

Mr. BLAKESLEE.—We object to the offer of this exhibit upon the grounds of the objection last urged and as indefinite, the reamer not being before us for identification, and as far as our present knowledge is concerned not even being in existence excepting on the assumption that it is still in the files of the clerk of said court, and as being improperly introduced at this time in connection with improper purported cross-examination, as being irrelevant, immaterial and incompetent, and there being no foundation laid in the direct examination of this witness for the production of any such purported exhibit. And we again insist that if this exhibit is to be considered in this case at all it [187] shall be so produced, that counsel for complainant may have the proper opportunity to cross-examine any witness in connection with whose testimony such exhibit is offered.

Q. 296. (By Mr. LYON.) In your same deposition in said case you were asked the following questions and gave the following answers: "Q. 59. Have you at present any business relations with Mr. Arthur G. Willard, one of the patentees of said Willard & O'Donnell patent? A. I have. Q. 60.

(Deposition of Elihu C. Wilson.)

Please state what they are. A. He is vice-president and treasurer of the Wilson & Willard Manufacturing Company, and I am president of the same concern. Q. 61. How long has that relation continued?

A. About five years. Q. 62. Have you at

any time discussed with him the question of manufacture of the underreamer patented by said Willard & O'Donnell patent?

A. Yes, sir. Q. 63. Did you

ever at any time arrive at a definite determination whether or not your company should manufacture these Willard & O'Donnell underreamers?

A. We did. Q. 64. Please state what the determination

was. A. We concluded that the Wilson under-

reamer was an advantage over the O'Donnell & Willard underreamer in design, and that it was alto-

gether a better designed underreamer and that it was useless for us to attempt to put the O'Donnell & Will-

ard underreamer on the market in competition with it. That is correct, is it?

Mr. BLAKESLEE.—The same objections.

A. That is correct.

Q. 297. (By Mr. LYON.) In the same suit to which you have referred, Union Tool Company et al.

vs. Wilson & Willard Manufacturing Company, pending in this court, you were called as a witness

in rebuttal on behalf of Complainants, were you?

A. Yes, sir; I was subpoenaed.

Q. 298. And were asked the following questions and gave the following answers: "Q. 914. Then, do

you understand, and testify, from your mechanical knowledge, that the extension of the [188]

(Deposition of Elihu C. Wilson.)

spreading-surface of 'Complainants' Exhibit Double Underreamer' to the periphery of the body, and the corresponding extension of the expanding shoulders of the bits to bear thereagainst, involves the same mode of operation as in 'Defendant's Exhibit Wilson Underreamer Patent,' so far as the expansion and contraction of the bits are concerned? A. The mode of operation, namely, the acts or forces required, and which must be applied to the cutters to expand or contract them—I mean those forces employed which are in nowise any part of the reamer itself—is not changed by the change in design occasioned by extending the spreading-bearings to the periphery of the body. That principle is old; it has been used on various underreamers long before Mr. Double ever employed it. Q. 915. What forces, in your last answer, or acts, do you refer to as not being in anywise any part of the reamer itself? A. I mean the forces that are employed to draw the cutters downwardly overcoming the tension of the spring so that they will collapse over the end of the hollow-slotted extension. Q. 916. Now, so far as the underreamer, 'Complainants' Exhibits Double Underreamer' is concerned, in its mechanical embodiment, and the device described and shown in 'Defendants' Exhibit Wilson Underreamer Patent,' is concerned, from your understanding of mechanics do you understand that the extension of the spreading-surface of 'Complainants' Exhibit Double Underreamer' to the periphery and the corresponding extension of the expanding shoulders of the bits thereof to bear there-

(Deposition of Elihu C. Wilson.)

against involve the same mode of operation, or do they involve a different mode of operation? A. The same mode of operation will collapse the cutters or expand them to reaming position. Q. 917. Based upon your knowledge of mechanics, does this extension of the spreading-surface of 'Complainants' Exhibit Double Underreamer, to the periphery and the corresponding extension of the expanding shoulders of the bits thereof to bear thereagainst, involve the same principle of action in the expansion and contraction of the bits or cutters as is [189] involved in the device shown and described in 'Defendants' Exhibit Wilson Underreamer Patent'? A. There is a different principle of action. Q. 918. In what does that different principle of action consist, in your opinion? A. Well, that question will require considerable time to answer. It has been answered two or three times before, and at considerable length. Q. 919. You should be capable of a concise answer; and, will you please give it, so that we may know exactly what you have in mind after a complete study of the matter? A. The means employed to expand the cutters of the Double underreamer—either Complainants' Exhibit or Defendant's Exhibit Double Underreamer—consist of three main features: First, is the stationary wall or partition, so placed on the reamer body itself, and integral with the body, that it forms a wedge or a spreading-bearing between the cutters. The faces of this stationary wall are parallel, that is, the bearing-faces or the opposite faces on which the

(Deposition of Elihu C. Wilson.)

cutters rest when in expanded position. The cutters themselves have V-shaped grooves planed across the backs of the cutters, and which grooves are necessary in order to permit the cutters to collapse over this stationary wall or partition, or hollow-slotted extension, as it is repeatedly termed in the Double underreamer patent. In addition to the tilting action or collapsing action of the cutters, namely, the action produced by swinging the cutting end of the cutters toward each other as the cutters are collapsed over this spreading-bearing of the reamer body when the cutters are drawn down sufficiently for them to slide over and below the lower end of the hollow-slotted extension, there is an additional means employed to enable them to collapse and also to assist in expanding them, and that is due to the upwardly and inwardly inclined grooves, which form pockets to engage the shanks of the cutters. By reason of these pockets being at an angle with the vertical line of the reamer body, the angle being inwardly and [190] upwardly, the cutters are obliged to follow the trend of these grooves when being drawn downwardly to collapse the same, or when being drawn upwardly by the power of the spring when expanding them to reaming position. Now, the combination of the wedge-like action of the hollow-slotted extensions, also by reason of the beveled face on the projection or shoulder on the inner faces of the cutters, which projection or shoulder is produced by the V-shaped grooves planed across the backs of the cutters, also by the additional action or force

(Deposition of Elihu C. Wilson.)

occasioned by the angularly planed grooves or channels in which the cutters travel, all together produce the contraction and expansion principles of action of the Double underreamer in both defendant's and complainants' exhibits. In other words, there are means on the cutters themselves, and also on the bodies, the combination of which means produce the action. To obtain this action it is necessary for the cutter to teeter during the time of its collapse or expansion. When the cutters are being collapsed the upper end of the cutter, namely, all of that portion of the cutter which is above the point of contact on the spreading-bearing of the body, tilts outwardly and slides upon the key to which it is suspended while so doing. The lower end of the cutter tilts inwardly at the same time. Thus, the cutter produces a teetering action, the fulcrum being at the point of contact at the inner face of the cutter, where it bears against the spreading-bearings of the reamer body. Now, with the Wilson underreamer, there is no such teetering action. It is true the extreme upper end of the cutter has a tendency to tilt outwardly while the cutters are being collapsed and drawn downwardly into collapsed position, but it is only that portion of the cutter which is above the suspension means—very different from the Double cutters, as his cutters tilt outwardly above the bearing-points or points of contact on the reamer body. With the Wilson reamer the cutters do not slide inwardly or [191] outwardly upon the suspension-means or T; they merely swing from the

(Deposition of Elihu C. Wilson.)

suspension-means as a pendulum swings. The expansion or contraction of the Wilson underreamer cutters is produced by the following means: The tapering ends or wedgelike projections which form the lower extremities of the forks or two prongs of the reamer body act as wedges or spreading-bearings upon which the cutters ride. The points on the cutters which contact with these spreading-bearings of the reamer body are placed in an entirely different position on the cutter from the point of contact on the Double underreamer cutter. The Wilson underreamer cutters are so formed that the main body of same projects a considerable distance to each side of the shank of the cutter. These projections form shoulders which are machined to correspond and to rest upon the wedgelike projections on the ends of the prongs or forks of the Wilson reamer body. There are no V-grooves planed in the backs of the Wilson underreamer cutters, such as are found on the backs of the Double cutters, for the reason that they are not needed; there is no occasion for them. The design of the Wilson reamer body is such that when the cutters themselves are collapsed together there is no part of the reamer body itself interposed between the cutters. To collapse them they are simply drawn down until the shoulders on the extended body, or widened body, ride over and below the spreading-bearings or wedge-bearings on the ends of the prongs of the reamer body. The cutter, being suspended on a T, merely swings inwardly from its suspension-means. There being no

(Deposition of Elihu C. Wilson.)

material between the two cutters, that is, no portion of the body itself, there is nothing to prevent the cutters from swinging toward each other as they commence to collapse while riding down the taper-faces of the spreading-bearings of the reamer body. To expand the cutters, the force of the spring draws them up as they bear on the spreading-bearings of the prongs of the reamer body, and the wedge-action together with the taper face of the spreading-bearings finally crowds them out [192] into full expanded position. I think that is all. No; I might add: The upper ends of the Wilson cutters do not come in contact with any angular faces or any angular grooves to in any way assist them to collapse or to expand. There are no such means employed on the Wilson underreamer, and that feature alone makes a very marked difference in the principles of action between the two designs of reamers. Q. 920. Then, to sum up your conclusion, the principles of action of 'Complainants' Exhibit Double Underreamer' and of the device of 'Defendant's Exhibit Wilson Patent,' in expansion and contraction of the bits or cutters, are distinctly different and not substantially the same? Is that your testimony? A. There are very marked differences. Q. 921. (By Mr. LYON.) Will you please answer the question yes or no? Read the question again. (Question No. 920 reread to the witness by the Special Examiner.) Give us a yes or no answer, please. A. They are not the same. Q. 922. and the 'Complainants' Exhibit Double Underreamer'

(Deposition of Elihu C. Wilson.)

and the device shown and described in 'Defendant's Exhibit Wilson Patent' employ distinctly different mechanical principles in the relations and actions of the spreading-portions, thrust-bearings, and inter-engaging dovetails of the bit and body portion, do they?, A. Yes, sir; they do. Q. 923. Is the principle of action of the cooperative parts in the expansion of the bits or cutters of 'Complainants' Exhibit Double Underreamer' and 'Defendant's Exhibit Double Underreamer' different, or the same? A. The means employed to expand or collapse the cutters are virtually the same. Q. 924. They are identical, are they not? A. No, sir. Q. 925. How do they differ? Please note that the question refers to the expansion and contraction of the cutters only. A. The principles are the same. There is a little difference in the division of force employed to obtain the full expansion or collapsion. One depends more on the taper-grooves which incline upwardly and inwardly and in which [193] the cutters travel than the other does. Q. 926. Which one of these two devices depends more upon such taper? A. The later device, I think. Q. 927. 'Complainants' Exhibit Double Underreamer'? A. Complainants' Exhibit Double Underreamer.' Q. 928. When the bits or cutters of a Double underreamer are collapsed, what function does the metal at the bottom end of the underreamer and lying between the bits in collapsed position, perform? A. It acts as a stop, or a retaining-means, an abutment over which the shoulder across the back of the Double cutter en-

(Deposition of Elihu C. Wilson.)

gages or hooks onto that portion of the reamer body, holding the cutters in collapsed position and overcoming the tension of the spring." Is that correct?

Mr. BLAKESLEE,—The same objections.

A. That is correct.

Q. 299. (By Mr. LYON.) In the same deposition when called in rebuttal on behalf of complainants, you were asked the following questions and gave the following answers: "Q. 935. Referring again to 'Complainants' Exhibit Double Underreamer,' if the bits of this reamer were cut away so that that portion of the bits on the inner faces registering with the shanks were not raised above the inner face of the shanks of the bits but continued straight and did not contact at any time with the spreading-surface, would the principle of action of the parts of such underreamer in expanding or collapsing remain the same as now embodied in the exhibit 'Complainants' Exhibit Double Underreamer'? A. I think you are mistaken in your statement that the raised portion of the cutter at the back of the cutter projects beyond the back of the shank of the cutter. The projection or portion of the back of the cutter which comes in contact with the spreading-face of the hollow-slotted extension is in exact plane with the upper end of the back of the shank—back of the upper end of the shank—so that before the material is planed out to form the V-shaped grooves [194] the back of the shank of the cutter is a flat plane. Q. 936. Well, you seem to have identified without difficulty the portion that I have referred to.

(Deposition of Elihu C. Wilson.)

Now, if the portion that I have referred to were cut away so that for the widths of the shank of the cutter there was no contact of the bit at any time with the spreading-surface, would the principle of action of the parts in expanding or collapsing be the same as now embodied in the exhibit underreamer 'Complainants' Exhibit Double Underreamer'? A.

Do I understand you to mean that if this entire bearing point was removed, or only that portion of it which constitutes the back of the shank of the cutter?

Q. 937. That portion which is of the same width as the shank of the cutter. A. A certain amount of the back of the cutter would have to remain in order to give it the full expansion that the cutter has in its normal state. With that portion of the back of the cutter remaining intact, namely, that portion of the bearing which is on the body proper of the cutter and which forms the faces on the body and on the projecting shoulders of the body—if that remained, the cutter would expand to position over the spreading-bearing as now, although its action would probably be modified by reason of the changed position of the lower wall or shoulder of the V-shaped groove lowering the same further down on the shank, Q. 938. You say that the action would be modified.

Would it still be the same principle of action? A. Yes, sir; it would, There would be simply a modification of the amount or extent to which the cutters would be expanded or contracted. Q. 939. Now, again referring to cutting away the portion of the shank of such cutter or bit at the point that you iden-

(Deposition of Elihu C. Wilson.)

tified for me in response to my previous question, and cutting that deep enough so that no portion there would contact, and permitting the contact to come only at the sides of the extension on the body beyond the width of the shank of the cutter, and permitting only those points or shoulders to [195] contact with the end or expanding surface of 'Complainants' Exhibit Double Underreamer,' would such bit then used in 'Complainants' Exhibit Double Underreamer' have the same principle of action in expansion and contraction as is present in said exhibit with the cutters in the form shown in said exhibit, or would it be a different principle of action? A. It would be a different action. Q. 940. Would you say a distinctly different action from that now embodied in 'Complainants' Exhibit Double Underreamer'? A. It would eliminate one of the means now employed by Double as exhibited by 'Complainants' Exhibit Double Underreamer,' to expand the cutters. Q. 941. Then, in your opinion, as a mechanic, it would form a distinct device, would it? A. It would be a different device; yes, sir." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. That is correct.

Q. 300. (By Mr. LYON.) In the same deposition you stated, did you not, in answer to question 970 that: "The means employed to expand the cutters of the double reamer are altogether different from those employed to expand the cutters of the Wilson reamer"?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

Q. 301. (By Mr. LYON.) And in that deposition you testified, did you, that the principles of expansion and contraction of the so-called old style and so-called new style or improved Double reamers remained practically the same, but that “there is a radical difference in the form of construction and the means employed to expand the cutters” in the Wilson reamer of the Wilson patent in suit in this case, offered in evidence in said prior suit and referred to in said deposition as “Defendant’s Exhibit Wilson Underreamer Patent,” as contrasted with either such old style or such improved Double reamer?

Mr. BLAKESLEE.—The same objections as heretofore made, [196] and we further object to this attempt to summarize the testimony, and must insist that if the witness is to put on record again as to the same matters on which he has been put of record, that the exact record be quoted if he is expected to give a yes or no answer. The issues that are involved here pertain to such definite differentiation and comparison that the record should speak for itself as to all these matters and not be built up of abridgments of previous testimony and testimony given in another cause of action.

Mr. LYON.—Let the record show that before answering this question the witness was given full opportunity to read his said deposition on behalf of complainant in rebuttal in said suit of the Union

(Deposition of Elihu C. Wilson.)

Tool Company vs. Wilson & Willard Manufacturing Company, or so much thereof as he desired, in connection with this question, and that his particular attention was called to questions Nos. 963 and 972, and the answers given by him thereto.

A. I testified in substance to that effect; yes, sir.

Q. 302. (By Mr. LYON.) And you stated that such difference between such Wilson reamer and both such so-called old style and such improved or new style Double reamer, was so radical as to give an entirely different principle of action in respect to the principles of expansion and contraction, did you?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir; I so testified.

Q. 303. (By Mr. LYON.) In the same deposition and on redirect examination you were asked: “Q. 1006. Do the lateral extensions of the cutters or bits of ‘Complainants’ Exhibit Double Underreamer’ perform the same or substantially the same functions as the lateral extensions of the Wilson underreamer?” and you answered, “A. They perform a portion of the same functions.” And, reading further from your testimony: “Q. 1007. Are the functions substantially the same? A. A portion of the functions [197] which they perform are substantially the same. Q. 1008. What portion? A. They brace the cutters against the rotary motion which I have previously described; their very existence widens the body of the cutter, which gives more cutting surface to the cutter, increasing

(Deposition of Elihu C. Wilson.)

the strength of the cutter, gives more material in the cutter and, consequently, a longer life. Q. 1009. In their mechanical co-operation with the co-acting surfaces on the body of the underreamers, do the lateral extensions to which you have referred on the cutters or bodies of 'Complainants' Exhibit Double Underreamer' perform the same or substantially the same functions as the lateral extensions of the bodies of the Wilson underreamer? A. I will repeat that they perform a portion of the same functions. Q. 1010. Those are the functions which you have referred to in the previous answer? A. Yes, sir; those are among them. Q. 1011. Any others? A. Yes, sir; by that form of construction the strains on the cutter are better resisted and makes a stronger cutter and gives more bearing surface on the cutter itself and on the body, and, consequently, better enables the reamer to resist the wear. Q. 1012. Do they perform the same or substantially the same functions in the collapsing and contracting of the bodies? A. To a certain degree; yes, sir. Q. 1013. The difference is one of degree, then? A. There is a difference, but it is one of degree, I should say. There is a difference. Q. 1014. Now, as to any analogy between the action of the cutters of 'Complainants' Exhibit Double Underreamer' and the cutters of the underreamer of 'Defendant's Exhibit Wilson Underreamer Patent,' in the expanding and contraction actions, have you anything further to add to your testimony given in cross-examination with respect to the coengagement of the lateral ex-

(Deposition of Elihu C. Wilson.)

tensions or shoulders of the cutters with the lateral extensions upon the body formed by V-notching the body in 'Complainants' Exhibit Double Underreamer'? A. So far as the general forms of construction are [198] concerned, the Double Underreamer cutter as shown by 'Complainants' Exhibit,' lacks only one thing to make it almost identical with the Wilson underreamer cutter and that is the omission of the V-groove across the back of the shank of the cutter. Otherwise the cutters are about the same." Those are correct extracts from your testimony in said depositions, are they, and you gave that testimony, did you?

Mr. BLAKESLEE.—I think you should read the next question and answer, because the answer to this one was not responsive.

Mr. LYON.—You can do that on redirect.

Mr. BLAKESLEE.—The same objections, and the witness is informed that he may look at his deposition and in answering add to it such statement as he may wish.

Mr. LYON.—The procedure of counsel is objected to as an evident coaching of the witness and not the proper proceeding.

Mr. BLAKESLEE.—In such an unusual procedure as the present, the witness certainly is entitled to have before him all that he testified to, that is, his whole deposition in the other case, and that that deposition be considered as a whole; and it is not fair to the witness to pick out from that deposition arbitrarily certain parts of a *large witness* to

(Deposition of Elihu C. Wilson.)

amplify further related parts.

Mr. LYON.—The reason for not offering in evidence the whole deposition of the witness is simply that large portions of the testimony of this witness in such suit of Union Tool Company et al., against Wilson & Willard Manufacturing Company, cannot pertain in any manner to this particular suit or the subject matter of this particular suit, and the witness is entitled to read the whole of his testimony in that connection if he so desires it before answering any question. But your objection is to the conduct of counsel in particularly pointing out to him [199] any particular question or answer and thereby directing his attention to and coaching him to be careful in regard to any particular answer given or to any apparent discrepancy in his testimony then given and as given in this case.

Mr. BLAKESLEE.—Such was not my object, and I ask counsel in all fairness before passing the testimony to the witness to quote the succeeding answer which is necessary in order that the full answer may be given to the question which he has quoted.

Mr. LYON.—My refusal to read into the record the next question is based on the fact that counsel in asking the next question had stated to Mr. Wilson in the former deposition that his question No. 1014 was not with respect to construction, and that the answer given by Mr. Wilson was not as to the subject matter that he then desired, but the answer thus quoted from the answer of this witness to question 1014 as given by the witness is a portion of the

(Deposition of Elihu C. Wilson.)

testimony that we desire, and not with regard to some other subject. If counsel desires to have any other portions of this deposition introduced on re-direct examination he can introduce as many of them as he desires without objection from us.

Mr. BLAKESLEE.—We shall ask that all of this examination on the previous record be stricken out from the record, anyway, on the objections made of record.

Mr. LYON.—It is necessary, in order to use the former testimony and deposition of this witness in impeachment of his present deposition, that the witness be interrogated as to the correctness of such testimony, inasmuch as such former deposition was not signed by him.

A. Yes, sir; that is my testimony. But I believe the answer to question 1014 is based on a misunderstanding of that question. It does not seem to be responsive to the question, and, [200] as I read question 1015, which is a rewording, apparently, of question 1014, I observe that my answer to question 1015 is a more correct one than the answer given to question 1014.

Q. 304. (By Mr. LYON.) The statements, however, contained in such answer to question 1014, as just quoted by me, are correct statements of fact, as you understand the subject matter of such answer, and as you did understand it at the time of giving such answer? Is that correct?

A. So far as the statement of fact is concerned in the answer to question 1014, I will say that substantially it is correct.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—In fairness to the witness I request the notary to copy into the record here at this time the said question 1015 and the answer thereto, referred to by the witness.

“Q. 1015. My question, Mr. Wilson, was not with respect to the construction of the cutter on ‘Complainants’ Exhibit Double Underreamer’ taken by itself, but with respect to the contraction and expansion action and the participation in the same of the lateral extensions or shoulders, upon the cutters of ‘Complainants’ Exhibit Double Underreamer’ with the lateral extensions upon the body of ‘Complainants’ Exhibit Double Underreamer’ formed by V-notching the body at the bottom. As to this participation and strictly in the contracting and expanding actions, have you anything further to add to your previous testimony on cross-examination, completed this morning, qualifying or explaining such participation of such parts and surfaces in such contracting and expanding actions? A. Inasmuch as those parts are in contact with each other during a portion of the contraction and expansion action of the cutters, they unquestionably perform in a measure the same functions that the bearings at the back of the shoulders of the Wilson underreamer-cutter perform when riding on the spreading-bearings of the Wilson underreamer body.” [201]

A. I might qualify my last statement by saying that the substance of the reply to question 1014, while being true, does not seem to be a proper answer

(Deposition of Elihu C. Wilson.)

to the question, as it is not altogether responsive, although in a measure it is.

Q. 305. (By Mr. LYON.) Mr. Wilson, please take Complainant's Exhibit Wilson Patent, being letters patent of the U. S. No. 827,595, herein sued on, and, in conjunction with Figs. 8 and 9 of the drawings thereof and one of the underreamer cutters of Complainant's Exhibit Wilson underreamer and explain to us the relation of the two shoulders 4³ and the position thereof with relation to the portion of such cutters lying between such shoulders.

Mr. BLAKESLEE.—Objected to as not the best evidence. Inspection is the true test.

A. The two shoulders as shown in the drawing of Wilson underreamer patent No. 827,595, Fig. 9, are connected at their lower ends by a continuous plane extending from one shoulder to the other. This was accomplished by the cross-cut of the planer sweeping the full face of the back of the cutter. Our shop practice, as it is now observed, machines the two bearings at the back of the shoulders of the cutter, bearings 4³ by independent operations, leaving those two bearings separate and apart from each other. In the shoulders of the cutters 4³ as shown on drawing Fig. 9, were separated partly from each other by the lower terminus or cutting part of the shank, and were otherwise connected by a continuous plane. The cutter as shown by Complainant's Exhibit Wilson Underreamer is almost, if not quite, completely divided by that portion of the cutter-body which remains between the two

'(Deposition of Elihu C. Wilson.)

bearings, and after the two bearings have been machined.

Q. 306. (By Mr. LYON.) In the so-called Wilson underreamers as manufactured by you at the Bakersfield Iron Works or the first reamer manufactured for you at the Baker Iron Works in 1904, as you have stated, or the Wilson reamers manufactured for [202] you by the Wilson & Willard Manufacturing Company, is it a fact that all of the cutters for such reamers have been practically identical with the cutters of Complainant's Exhibit Wilson Underreamer, so far as these bearing-faces (4³) on the inner side of the two shoulders of the cutter, and the metallic portion of the body or shank of the cutter extending between such bearing-faces, and at different planes therefrom, are concerned?

A. It is my recollection that the first cutters that were made for the Wilson underreamer were formed at their backs and that part set forth in the question, more nearly like the drawing shown in the Wilson underreamer patent than as we are now making them as shown in the Wilson Underreamer Complainant's Exhibit.

Q. 307. Now, please answer the preceding question in full.

A. Read the question. (The question is read by the notary.) I think the same can be said of the cutters that were first made by the Bakersfield Iron Works for the Wilson underreamer. And I believe all those that were made by the Wilson & Willard Manufacturing Company are substantially as those

(Deposition of Elihu C. Wilson.)

shown by Complainant's Exhibit Wilson Underreamer.

Q. 308. What has become of the original underreamer that you had made by the Baker Iron Works in 1904?

A. It was sent back to the Bakersfield Iron Works and the body was used up with the other materials.

Q. 309. What has become of the cutters?

A. I don't remember. I suppose they were hauled away as junk, like lots of other materials were.

Q. 310. When was this reamer cut up and when were such cutters disposed of?

A. Probably in 1904-5.

Q. 311. Was it in 1904 or 1905?

A. I can't say. [203]

Q. 312. Please explain to us in detail, using one of the cutters of Complainant's Exhibit Wilson Underreamer by way of illustration, any difference between the formation of these bearing-faces 4³ with relation to the interposed portion of the body or shank there between, as the same exist in one of the cutters of Complainant's Exhibit Wilson Underreamer, and the first Wilson underreamer built for you by the Baker Iron Works in 1904?

A. I have just stated that to the best of my recollection the first cutters made, and which were those made by the Baker Iron Works of this city, were formed at their back very much as the drawing shows in Fig. 9 of Complainant's Exhibit Wilson Underreamer Patent.

Q. 313. That, Mr. Wilson, does not answer the

(Deposition of Elihu C. Wilson.)

question. The question calls for an explanation of what that difference was.

A. The difference is simply this: that in making the first cutters we removed more of the body of the cutter—machining it down to the same plane as the bearings 4³—than we do in machining the Wilson underreamer cutters today.

Q. 314. And that would cut off more of the shank of the cutter, would it?

A. That is not a part of the shank of the cutter. It is a part of the body that remains after machining the bearings 4³.

Q. 315. Did you then leave a shoulder projecting out above or at the line of the said shoulders of the cutter and where the shank joins the body?

Mr. BLAKESLEE.—We object to the arbitrary use of the term “shoulder,” and the question has been answered by reference to the patent and drawings previously.

A. I don't know as I could make it as clear in words as the drawing Fig. 9 shows in the patent, Complainant's Exhibit, and, if you need them, I will repeat substantially the same as [204] shown by Fig. 9 of Complainant's Exhibit Wilson Underreamer patent.

Q. 316. (By Mr. LYON.) In the making of such underreamer at the Baker Iron Works, as you say, in January or February of 1904, is it a fact that such underreamer was constructed from working drawings? A. Yes, sir; I think it was.

Q. 317. Have you those working drawings? If

(Deposition of Elihu C. Wilson.)

so, please produce them.

A. It may be that I have them, although I have not seen those drawings for several years, to the best of my recollection. I may have them somewhere in my files.

Q. 318. Please made a search for them and produce them here before the close of the testimony on behalf of complainant in this case.

Mr. BLAKESLEE.—We object to this request as irrelevant, immaterial, incompetent, not cross-examination, having nothing to do with the testimony produced upon the direct examination of this witness. The patent speaks for itself as to the invention, and the development of the invention in its various stages, and it is not concerned in the issue of infringement which is raised here.

Q. 319. (By Mr. LYON.) At what time during the pendency of your application for the Wilson patent, Complainant's Exhibit Wilson Patent, did you visit the Patent Office at Washington, D. C., and have an interview with the Examiner in charge of your application for said letters patent?

A. I believe I went to Washington during the month of March or April, 1906.

Q. 320. And you saw the Examiner in charge of the examination of your application for said letters patent at the United States Patent Office, did you?
[205]

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

Q. 321. (By Mr. LYON.) Did you at that time

(Deposition of Elihu C. Wilson.)

have with you one of the bits or cutters of one of your Wilson underreamers? A. I did not.

Q. Did you at any time either personally or through any attorney or agent exhibit to such Examiner of the U. S. Patent Office one of the cutters of your so-called Wilson underreamer during the pendency of said application?

Mr. BLAKESLEE.—The same objection.

A. No, sir.

Q. 323. (By Mr. LYON.) I now show you Complainant's Exhibit Wilson File Wrapper and Contents, and particularly a drawing marked exhibit "A," E. C. Wilson Underreamer, Mail-room, Jun. 18, 1906, U. S. Patent Office, having been endorsed on the back thereof, and ask you if you can state what such drawing is.

Mr. BLAKESLEE.—Objected to as not the best evidence, and the form in which the question is put is improper, this drawing being part of a certified record and speaking for itself.

A. That is a photographic copy of the blue-print, which blue-print was a working drawing of the first Wilson underreamer that was made, and was made by the Baker Iron Works of this city.

Q. 324. (By Mr. LYON.) I note that Complainant's Exhibit Wilson Underreamer does not conform to the drawings of the Wilson Patent Complainant's Exhibit Wilson Patent, particularly in that a T-rod or mandrel has been slotted and the arrangement of the coil spring has been changed to a degree, and the T-rod is mounted by means of a key.

(Deposition of Elihu C. Wilson.)

passing through the slot in the T-rod. When did you first make an underreamer embodying this changed construction?

Mr. BLAKESLEE.—In the first place, this question is objected to as being irrelevant, immaterial, incompetent and not within the issues of this case as defined by the election of the [206] certain portions of the patent sued under; and, furthermore, the question is directed, as counsel for the defendant must well know, to the determination of certain data most vital to the determination of a certain issue now pending between this witness and a client of counsel for the defendant relative to establishing priority of invention involving the key referred to in this question. This is not the proper time to take testimony on the issue of this key and the slot in the spring-actuated rod or T, and the witness is advised that as the question is not pertinent to this issue and as the time for taking testimony and proofs with relation to such key has not arrived, that he need not answer this question unless instructed by the Court.

A. Acting on the advice of counsel, I refuse to answer the question.

Mr. LYON.—We request the certification and return of this deposition, so far as now completed, to the United States District Court for the Southern District of California at Los Angeles, California, immediately, and give notice that we shall bring on for hearing on Monday, March 30, 1914, at the opening of court on said day, or as soon thereafter as

(Deposition of Elihu C. Wilson.)

counsel can be heard, a motion by the defendant for an order requiring the witness to answer this question. And the defendant declines to proceed further with the testimony in this action until such matter is determined, and requests that an adjournment be taken for such purpose.

Mr. BLAKESLEE.—We will proceed with the redirect examination of the witness, and counsel will have an opportunity to further cross-examine the witness.

Mr. LYON.—Any further examination of this witness is objected to as out of order until the cross-examination of the witness is completed. And if the examination of the witness or any other witness in this case is proceeded with, pending this determination, notice is hereby given that we shall move to [207] suppress the same and every portion of the same as out of order.

Mr. BLAKESLEE.—Counsel cannot halt the progress of this deposition because of an unsatisfactory fishing excursion. We shall proceed to more serious pursuits than fishing, and take up the redirect examination of the witness.

Mr. LYON.—Each question asked and answer given is subject to the objection noted on the record without the necessity of hereafter repeating the same, and subject to our motion to strike out the same on the grounds stated, which will be insisted upon. And if the deposition is not certified and returned as requested, the defendant gives notice that he will move to strike out the entire deposition from the record

(Deposition of Elihu C. Wilson.)

and exclude it from consideration on the ground that the notary, acting under instructions from counsel, has refused to make the certificate required as requested by counsel for the defendant.

Mr. BLAKESLEE.—We do not oppose the certification of the record or its return for the purposes of the motion in the least. We simply proceed upon our notice given to go on with this deposition, and do not propose to be interfered with in so doing simply because of the immaterial, incompetent and irrelevant and improper question put to the witness.

Mr. LYON.—That there may be no misunderstanding between counsel, and that it may appear clearly upon the record, I now state that the cross-examination of this witness has not been completed as to any part of his direct examination.

Mr. BLAKESLEE.—We give notice reciprocally to counsel that if the motion introduced is pressed we shall ask an order limiting the cross-examination of the present witness to the record in that respect as it now stands, and shall urge that he has waived his rights to further cross-examination by voluntary termination. The time to complete proofs in this case is short, and if these proceedings can be arbitrarily halted by any such proceeding and motion thereon as has just been made of record, [208] there is no knowing when the record may be completed or whether it may be completed at all. Counsel well knows the condition of the calendar of the Court, and it may be a month before his notice of motion may even be heard.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—And counsel is also aware of the condition of the calendar and the past experience of the Court with the calendar, and the fact that there is slight possibility and no probability of this case being heard at this term of court.

Mr. BLAKESLEE.—That is for the Court itself to determine.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 325. Now, with relation to the cutters of complainant's Exhibit Wilson Underreamer and Complainant's Exhibit Wilson Patent and Complainant's Exhibit Improved Double Reamer and Cutters, please compare the bearing-surfaces on the backs of the shoulders of the cutters of the mechanical exhibits with the bearing-surfaces on the backs of the shoulders of the patent exhibit, and state which mechanical formation or arrangement, if either, is more or less like the formation in the patent disclosure.

Mr. LYON.—The further objection is noted to this question that it is leading and suggestive and incompetent and not the best evidence. The exhibits speak for themselves. The question calls for the mere conclusion of the witness and not for a statement of facts.

Mr. BLAKESLEE.—We are asking for a statement of facts, and not for his opinion. We want to show by the measure of his eye what these exhibits show. We wish him to visualize these exhibits.

Mr. LYON.—The objection is repeated.

(Deposition of Elihu C. Wilson.)

A. I should say that the bearings on the backs of the shoulders of the Double underreamer improved type, complainant's exhibit, more closely resembles the corresponding bearings on [209] the Wilson underreamer-cutter, Complainant's Exhibit Wilson patent, as shown in Figure 9. This is for the reason that there is very little of the space at the back of the body of the Wilson underreamer-cutter, Figure 9, as disclosed by Complainant's Exhibit Wilson Underreamer Patent, that is not a continuous plane or a continuous surface. The same can be said of the back of the cutter of the Double underreamer improved type, Complainant's Exhibit. That cannot be said of the Wilson underreamer-cutter of Complainant's Exhibit Wilson Underreamer Cutter, as in that case the bearings 4³ are entirely separated by a portion of the metal or body of the cutter which was not displaced when machining the bearings 4³.

Q. 326. (By Mr. BLAKESLEE.) And with relation to this portion of the metal which was not displaced in planing the back of the cutters of Complainant's Exhibit Wilson Underreamer to produce the bearing-faces on the backs of the shoulders, what have you to say with respect to the groove in the back of the bearing-faces back of the cutter of Complainant's Exhibit Improved Double Reamer and Cutters?

Mr. LYON.—Objected to on the further grounds that it is leading and suggestive.

A. The groove at the back of the Double underreamer, Complainant's Exhibit Improved Double Underreamer, partly divides that bearing into two

(Deposition of Elihu C. Wilson.)

separate bearings or faces. In that regard the grooves produce a similar result with the Double underreamer-cutter, improved type, that is produced on the Wilson underreamer as shown by the drawing Figure 9, Complainant's Exhibit Wilson Underreamer Patent, by leaving a portion of the body intact and interposed between the two bearings 4³. It will be clear that in each case a portion of the face or bearings at the backs of the cutters are divided into two separate faces.

Q. 327. (By Mr. BLAKESLEE.)—Now, will you please draw [210] the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, down into the positions which they assume when contracted, and tell us whether they are then held in rigid relation to each other or what their relation in such position is.

Mr. LYON.—The question is objected to for the reason that there is no proof whatever that the said cutters are a pair of cutters manufactured by the defendant in this case, or that they are a pair of cutters, and on the further ground that the operative parts of this reamer are not produced and that the guess of the witness in answer to this question must be mere speculation; and on the further ground that his testimony is incompetent and that no foundation is laid, the witness not having qualified to answer this particular question in relation to this particular reamer or pair of cutters.

Mr. BLAKESLEE.—We stand upon the record and the stipulation as made, and also more or less

(Deposition of Elihu C. Wilson.)

upon the acts of the counsel as reflected in the previous objection that this suit rests more upon the cutters and, I suppose, the parts co-operating therewith, judging from his cross-examination, it is upon complete underreamer organization. We think the witness is capable of bringing the cutters into the position requested without further qualification, and I will ask him to do so and state what their relation is in such position.

Mr. LYON.—Counsel should not fall in error as to the character or scope of claim 16 or claim 17 of the Wilson patent in suit, due to any cross-examination of this witness by counsel for the defendant, which cross-examination has been conducted for the purpose of clarifying the testimony of the witness in regard to the general operation and construction of the so-called old style Double and so-called improved Double reamers, and the comparison of the underreamers as a whole with the underreamer as a whole as illustrated and described in the patent in suit, [211] Complainant's Exhibit Wilson Patent. The cross-examination has been conducted in that regard to meet the apparently erroneous theory of counsel for the complainant.

Mr. BLAKESLEE.—We must contend for consistency that counsel for defendant's theory seems to be erroneous with respect to the charge of infringement being pressed, and therefore, apparently cannot agree with him as to the construction placed upon those claims. However, that has nothing to do with the competency of the present witness to manu-

(Deposition of Elihu C. Wilson.)

ally manipulate these cutters, and we think he can do so and will again ask him to do so.

Mr. LYON.—Counsel for the complainant's last remarks show the necessity of the cross-examination of this witness as to the general comparison of the said so-called old style and improved Double reamers with Complainant's Exhibit Wilson Patent as a whole.

A. The Double underreamer, improved type, Complainant's Exhibit, has cutters which are suspended in the reamer body by means of a key or a single piece of metal which extends through slots in the shanks of the cutters, and which key, in turn, is suspended on a spring-actuated rod or mandrel which lies through the central bore or axis of the reamer body. To collapse the cutters preparatory to running the reamer into the casing a rod having a thread on one end and, customarily, an eye at the other, is screwed into place in a hole drilled and tapped to fit the threaded end of the eye-rod or rod having the eye on it. By drawing this eye-bolt or eye-rod downwardly, after it has been fixed in place in the lower end of the spring-actuated rod, the spring is compressed and the tension on the cutters is immediately released and the cutters hang loosely suspended on the key to which they are attached. When this spring has been compressed to its fullest extent, namely, to a point where the key to which the cutters are attached strikes and bears against the lower end of the slot in the reamer body in which the key plays, the cutters [212] can be collapsed together by

(Deposition of Elihu C. Wilson.)

swinging them inwardly to the fullest extent. There is nothing to prevent them from swinging in or swinging out to their fullest limit, and there is nothing to prevent the insertion of a rod and eye-bolt between the cutters and into the spring-actuated rod as before described. Their outward motion, as in the case of the Double underreamer, improved type, Complainant's Exhibit, leaves a space between the cutters of not less than $2\frac{1}{2}$ to $2\frac{3}{4}$ inches, which is a great deal more space than is required to admit the threaded rod.

Q. 328. (By Mr. BLAKESLEE.) Among the miscellaneous objects on the floor here not in evidence, do you see anything which resembles such threaded rod and the eye-bolt that you have been talking about?

Mr. LYON.—Objected to as leading.

A. I do.

Q. 329. (By Mr. BLAKESLEE.) I should judge there are some fifteen miscellaneous objects on the floor, and I wish you to select from them any such thing if you find it there.

A. This rod here which has a thread at one end of it and the opposite end being rounded into the form of a ring, is the piece which I described, and the same piece is shown in Double Underreamer Patent 734,833 wherein the eye-bolt 28 is seen mounted in position in this spring-actuated rod in figure 1 of the drawings.

Q. 330. Now, with the cutters in the collapsed position and spaced apart as you have last testified,

(Deposition of Elihu C. Wilson.)

please state whether or not there is sufficient space for the introduction of this eye-bolt in working position without its contacting with the cutters at any points.

Mr. LYON.—Objected to as leading, and upon the further ground that it is incompetent, no foundation laid, the witness not having been qualified to answer the question with relation to the particular exhibits referred to, and upon the ground that [213] such exhibits are not themselves shown to be related to the same subject matter, there being no proof of identity of the particular cutters referred to as ever having been made or used in this particular reamer; and the other part of the reamer not being produced, it is mere speculation on the part of the witness.

A. When the cutters referred to are drawn downwardly to their fullest collapsing position, and swung apart as they would swing by gravity, there is ample room to insert the eye-bolt referred to.

Q. 331. (By Mr. BLAKESLEE.) And with such ample space provided, what is the relation of the eye-bolt to the grooves cut in the bearing-faces on the backs of the bodies of these cutters which you have testified about?

Mr. LYON.—Objected to as assuming facts not appearing in the testimony of the witness from the record in this case or from the exhibits themselves, and as pure speculation, and as irrelevant and immaterial.

A. The grooves are not necessary in order to insert the eye-bolt in place in the spring-actuated rod or mandrel.

(Deposition of Elihu C. Wilson.)

Q. 332. (By Mr. BLAKESLEE.) Would the rod touch the walls of the groove or not?

Mr. LYON.—The same objection as last noted in the record.

A. They would not.

Q. 333. (By Mr. BLAKESLEE.) Now, leaving this particular reamer and these cutters, roughly, how many reamers and cutters of the improved type of Double reamer have you seen?

A. I have seen scores of them.

Q. 334. Have you seen the cutters of any of those reamers drawn down in collapsed position?

Mr. LYON.—Objected to as leading.

A. Yes, sir; I have.

Q. 335. (By Mr. BLAKESLEE.) How did the space between [214] them compare with the space between these cutters, and the position in which you have drawn them?

Mr. LYON.—Objected to as calling for the conclusion of the witness and not for a statement of facts, and as incompetent and not the best evidence, the witness not having qualified to answer the question.

A. With the reamers of the same size there would be little or no difference in the spacing.

Q. 336. (By Mr. BLAKESLEE.) Have you seen those eye-bolts holding down the cutters of such reamers?

Mr. LYON.—Objected to as leading.

A. I have.

Q. 337. (By Mr. BLAKESLEE.) How do they

(Deposition of Elihu C. Wilson.)

compare in dimensions with the eye-bolts you have referred to here?

Mr. LYON.—The same objection as to the next to the last question stated on the record.

A. The eye-bolts vary in size to accord with the size of the underreamers with which they are being used, and the eye-bolts 4-inch or 4 $\frac{1}{4}$ inch underreamers are, in a general way, probably the same size as these which we have before us, and for larger reamers are possibly somewhat thicker, but only very slightly heavier.

Q. 338. (By Mr. BLAKESLEE.) What do you suppose the tensile strength of that eye-bolt is?

Mr. LYON.—Objected to as irrelevant, immaterial and incompetent no foundation laid, the witness not having qualified to answer the question.

A. That eye-bolt would probably stand a tensile strain of six or seven thousand pounds.

Q. 339. (By Mr. BLAKESLEE.) And what is the tensile strength imparted by such a spring as is used in a reamer of this type and size when put under full contraction? [215]

Mr. LYON.—Objected to as incompetent, no foundation being laid, the witness not having qualified to answer the question and that it is a pure guess and conclusion of the witness. And I call the Court's attention to the fact that the witness has not produced, nor has he testified that he has ever seen the spring that was used in Complainant's Exhibit Improved Double Reamers and Cutters, and that it is irrelevant and immaterial, the tensile strength of

(Deposition of Elihu C. Wilson.)

such rod having nothing to do whatever with the fact as to the size of rods used by complainant in these reamers.

A. The extreme strength of the spring for 6-inch Double underreamers, improved type, would probably be from 1000 to 1500 pounds.

Q. 340. (By Mr. BLAKESLEE.) In testifying under cross-examination that the cutters of the Double underreamers are expanded by spring-actuated rods, did you testify from observation or hearsay?

Mr. LYON.—Objected to as leading.

A. From observation.

(Pursuant to the request of counsel for the complainant, an adjournment is now taken until Tuesday, March 31, 1914, at 10 o'clock A. M., at the same place.) [216]

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, a notary public in and for the county of Los Angeles, State of California, duly commissioned, sworn, and qualified to administer oaths, etc., do hereby certify that the witness in the foregoing deposition named, to wit, Elihu C. Wilson, was by me duly sworn according to law to testify the truth, the whole truth, and nothing but the truth. That the said deposition was taken at the time and place agreed upon by stipulation of solicitors for the respective parties, beginning on Tuesday, the 24th day of March, 1914, at the office of solicitor for

complainant, at 10 o'clock A. M. of said date, and thereafter from day to day to and including Friday, the 27th day of March, 1914. That pursuant to the request of counsel for the defendant made on the record, I hereby certify and return the deposition of the said witness, Elihu C. Wilson, and hereby certify that the foregoing is a full, true and accurate transcript of such deposition.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this 30th day of March, 1914.

[Seal]

I. BENJAMIN,
Notary Public in and for Los Angeles County, State
of California.

[Endorsed]: No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proofs Taken on Behalf of Complainant. Filed Dec. 18, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [217]

Friday, April 3, 1914,
10 o'clock A. M.

This being the time and place to which by consent of counsel heretofore entered into the further taking of proofs was continued, by agreement of counsel a further continuance is now taken until to-morrow, Saturday, April 4, 1914, at the same place, to wit, the office of Raymond Ives Blakeslee, Esq., solicitor for complainant.

Saturday, April 4, 1914,
10 o'clock A. M.

This being the time and place to which the further taking of proofs was continued, the proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

ELIHU C. WILSON, recalled.

Mr. BLAKESLEE.—The redirect examination of the witness E. C. Wilson is now terminated, and the witness is here and ready for recross-examination.

Mr. LYON.—The cross-examination of the witness not having been completed, as heretofore stated on the record, defendant stands on its motion and notice; and, upon a ruling by the Judge of this court on defendant's motion to compel the witness to answer the question which he refused to answer under advice of counsel, the cross-examination will be completed.

Mr. BLAKESLEE.—The complainant stands upon the motion of record noticed for the same time as the motion referred to by defendant's counsel, to limit the cross-examination of the present witness to the present record in that respect. The present witness is excused, subject to recall if found necessary or desirable. [218]

Deposition of W. W. Wilson, for Complainant.

W. W. WILSON, a witness produced on behalf of complainant, being duly sworn, testifies as follows:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 1. Please state your full name, age, residence and occupation.

A. William Webster Wilson; age, thirty-two years; residence, 1270 Western Avenue, Los Angeles, California; vice-president of the Wilson & Willard Manufacturing Company.

Q. 2. State briefly, please, what training, practical and academic, you may have had in matters scientific and mechanical.

A. Bachelor of Arts in electrical engineering, Stanford University, together with a half year post-graduate course along the same line; I have done mechanical draughting and machine design for the Bakersfield Iron Works two years, off and on, and more or less of the same work for different parties on small jobs; I have been connected with the Bakersfield Iron Works for about a year and a half, in charge of its various branches, and later on was connected with the Wilson & Willard Manufacturing Company for about four years and a half as chief accountant, superintendent of the shop and vice-president. I have been connected with the Columbia Oil Company and spent a considerable portion of my time while with the Bakersfield Iron Works in the oil fields in that vicinity in connection with design and operation of different oil well tools.

(Deposition of W. W. Wilson.)

Q. 3. During that experience have you come in contact, to any particular extent, with oil well tools known as underreamers?

A. Yes, sir. I did a large part of the designing, draughting and manufacturing of the Wilson underreamer as it [219] was brought out and developed at the Bakersfield Iron Works, and later on at the Wilson & Willard Manufacturing Company's plant, and to that end have made careful study of all of the makes of underreamers that I have been able to find.

Q. 4. Are you acquainted with the construction and mode of operation of underreamers known generally in the trade and field as Double underreamers?

A. Yes, sir.

Q. 5. Do you know by whom this type or make of reamers is produced? A. Yes, sir.

Q. 6. By whom?

A. The Union Tool Company.

Q. 7. Have you seen the Double underreamers and the Wilson underreamers that you have referred to in operation or in use or being put into use in the oil fields? A. Yes, sir.

Q. 8. Have you ever given any previous testimony in any litigation regarding underreamers?

A. Yes, sir.

Q. 9. If so, in what suit or suits?

A. In the suit pending in this court entitled The Union Tool Company et al., against Wilson & Willard Manufacturing Company, Circuit Court No. 1540.

(Deposition of W. W. Wilson.)

Q. 10. Have you ever given testimony in any other patent litigation with regard to oil well tools?

A. Yes, sir; the suit of Hardison et al. vs. Raine, involving a casing perforator, which suit was brought before and determined in this same court.

Q. 11. I show you Complainant's Exhibit Wilson Patent and ask you if you are familiar with the contents and disclosure of the same. [220]

A. I am.

Q. 12. In the previous suit concerning underreamers which you have testified about, did you consider and testify with respect to this patent?

A. Yes, sir.

Q. 13. Do you fully understand the construction and mode of operation and method of use and interrelation of parts and features of the subject and disclosure of this patent?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact.

Q. 14. (By Mr. BLAKESLEE.) I will withdraw the question. Please state how fully you understand the disclosure of this patent and in what respect.

A. I have gone carefully over the contents of this patent many times and have testified carefully on the same in the suit previously mentioned as The Union Tool Company et al. vs. The Wilson & Willard Manufacturing Company.

Q. 15. I now call your attention particularly to those parts of the underreamer disclosed in Com-

(Deposition of W. W. Wilson.)

plainant's Exhibit Wilson Underreamer, which are referred to therein, as, for instance, in line 71, page 1, as "cutters," and I will ask you to state in your own language the construction and formation of the same, together with the construction and formation of any other parts and features of the reamer with which these cutters may co-operate in the use of the reamer.

Mr. LYON.—The question is objected to in so far as it involves anything other than the cutter or bit itself, on the ground that complainant having stated that only Claims 16 and 17 of the Wilson Patent No. 827,595 are claimed to be infringed, and such claims are for an underreamer-cutter as an article of manufacture, the other portions of the underreamer or the mode of operation or coaction of any thereof with the underreamer-cutter [221] are irrelevant and immaterial to the issues of this suit, as said Claims 16 and 17 are limited to the underreamer-cutter *per se*, and are not combination claims involving any combination of an underreamer-cutter or the body portion or spreading-bearings or thrust-bearings of the reamer.

Mr. BLAKESLEE.—Complainant reiterates the position heretofore taken in this action as of record, namely, that this patent is for an underreamer and the subjects of Claims 16 and 17 are for underreamer features and not as differentiated by Section 4886, Revised Statutes, simply and distinctly and separately for an article of manufacture. The election to stand upon Claims 16 and 17 was carefully

(Deposition of W. W. Wilson.)

made conjointly with reference to the other portions of the disclosure of the patent with which the subject of such claim are necessarily related; and the Court's attention is again called to the fact that counsel has gone very extensively in cross-examination of the previous witness into the features of the underreamers concerned in this issue other than the cutters *per se*. It is not seen that this objection is consistent with the position taken by counsel as heretofore reflected by the record.

Mr. LYON.—If the examination of this witness is limited on direct to matters in issue, to wit, the underreamer-cutter, the cross-examination will be so limited.

Mr. BLAKESLEE.—The question speaks for itself and we shall expect cross-examination to follow the scope of the direct examination.

A. The underreamer cutter disclosed in the Wilson Underreamer Patent No. 827,595, Complainant's Exhibit Wilson Patent, is disclosed in drawings in Figures 7, 8 and 9, and in Figures 1, 3, 2 and 4 are shown in position in the underreamer body. The cutter consists of a long narrow part 4' known as the cutter-shank, below which and being the solid part therewith is [222] an enlarged portion shown at 4, usually designated as the body of the cutter. On the sides of the shanks are bearing-shoulders 4². At the upper end of the shank on the inner face shown in full in Figure 9 at 18 there is a recess for the reception of spring-actuated means. On the outside of the shank there is a shoulder shown in Figures 7 and

(Deposition of W. W. Wilson.)

8 at 30 for the purpose of contacting with the lower end of the casing or pipe 40 as shown in Figure 3 to effect collapsing of the cutters on the withdrawal of the reamer from the hole. Below the shank on the body there is an expansion-bearing face 4³, which face contacts on suitable faces on the reamer body to cause expansion and contraction of the cutters. At the very lowest point of the cutter, shown in Figure 8, not marked in the drawing, is an edge, which edge is usually known as the cutting edge and is that part of the cutter which is used to cut or impact with the earth in the underreamer.

Q. 16. Please state more particularly the functions or offices of the particular parts of the cutter which you have described, irrespective of the shank portion, and what results follow from the use of these cutters, both as to their service and as to maintaining of the cutters in serviceable condition.

Mr. LYON.—The same objection as noted to the preceding question.

A. The great width of the part 4 permits the cutter to ream a comparatively large part of the circumference of the hole at each stroke, and, therefore, making for faster reaming and more certain reaming of the entire circumference of the hole. The placing of the bearing-faces 4³ in the body of the cutter, as shown, produces a substantial bearing-face at the outer portion of the cutter body more firmly and securely bracing the cutter against strains caused in use, particularly those applied on one side of the cutter or tending to have a twisting action on the cut-

(Deposition of W. W. Wilson.)

ter body. The placing of the expansion-bearing face 4³ low [223] down on the cutter body permits the cutter to be braced at a point more in line with the cutting edges of the cutter, thus placing a reduced bearing action on the cutter-shank than would be the case were this bearing placed higher up. The enlargement of the cutter at this point permits the placing in this portion of the cutter a greater quantity of metal, which makes for longer wear and greater ability to stand abuse. The placing of expansion-bearing face on the cutter body permits a longer projection of the cutters below this point to be used, thus making for longer wear and permitting the cutter to be dressed more times before it is worn out.

Q. 17. (By Mr. BLAKESLEE.) What effect upon the cutting action or cutting arrangement of the cutter does the provision of the lateral enlargements or shoulders thereof in the cutters of the Wilson patent have?

A. This lateral enlargement of the body of the cutter over the shank as shown in Figure 9 of the patent permits an increased width of cutting face on the cutter when in reaming position, as shown in Figure 4, which causes the cutting face to embrace more of the entire circumference of the cutting circle, causing the reamer to ream more at each stroke of the tool, which makes for faster reaming and more certain reaming. The great difficulty found with narrow cutters was that they tend to start a key-seat in the hole or grooves down the side of the hole in which the cutters work, preventing the reamer from rotating and pre-

(Deposition of W. W. Wilson.)

venting a complete reaming of the hole, thus preventing the possible lowering of the pipe past this point. In order to overcome this, the tools are fed very slowly with the narrow cutter reamer so as to make as sure as possible that the cutters have engaged the entire circumference of the hole at the point where the reaming is in progress.

Q. 18. Has there been to your knowledge more than one type of Double underreamer used in the fields? [224] A. Yes, sir.

Q. 19. With how many such types are you familiar? A. Two definite types have been produced.

Q. 20. How are these types known or how have they been known in the field, if by any particular designation?

A. They have usually been designated by the drillers as the "Old style Double underreamer" and the Double improved underreamers.

Q. 21. Have you recently seen in the fields either of these types of Double underreamers?

A. I have recently seen in the fields many of the Double improved underreamers.

Q. 22. Have you recently seen any of the old style Double underreamers in the fields?

A. No, sir.

Q. 23. During how many years, approximately, does your experience extend in the observation of Double underreamers on the market and in the fields? A. During the past seven years.

Q. 24. During that period, roughly speaking, what has been the ratio of the number of old style

(Deposition of W. W. Wilson.)

Double underreamers that you have seen and the number of improved Double reamers which you have seen?

Mr. LYON.—Objected to as incompetent and immaterial.

A. Nearly all of the Double underreamers that I have seen in that time were Double improved underreamers. The only old-style underreamers that I have seen have been those underreamers usually in the scrap heaps about the oil fields and the iron works near the same.

Q. 25. (By Mr. BLAKESLEE.) What parts of said scrapped old-style Double underreamers did you see in such heaps?

A. The lower portion of the body, the body and cutters. [225]

Q. 26. What was the condition of the cutters?

A. More or less worn and rusty.

Q. 27. And were they still intact?

Mr. LYON.—Objected to as leading.

A. Yes, sir; so far as I remember.

Q. 28. (By Mr. BLAKESLEE.) Did you ever observe particularly as to this?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 29. (By Mr. BLAKESLEE.) When did you first see a so-called improved Double underreamer, approximately?

A. I believe it was in 1907, about June or July.

Q. 30. Do you remember where it was?

A. Yes, sir; in some of the oil well supply stores at

(Deposition of W. W. Wilson.)

Bakersfield, California.

Q. 31. Will you please compare the entire leading aspects and cutter of the old-style Double reamer with the cutter of the improved Double reamer?

Mr. LYON. The question is objected to as calling for a conclusion of the witness and not for a *statement of facts*.

A. The old-style Double underreamer cutter differs from the new style Double underreamer cutter in general by the relative amount of metal contained in the shank and body of the cutters, there being comparatively longer metal in the shank of the old-style Double underreamer cutter than the new, and, conversely, less in the body of the old-style than in the new style cutters. The dovetails of the old-style Double underreamer cutter differ from those of the new in that there are a number of auxiliary dovetailed shoulders at the lower portion of the shank which are not found on the new style or improved Double underreamer cutter. The bearing-face at the top of the old-style Double underreamer cutter differs from that of the new style in that it is at right angles or nearly so to the plane [226] of the outer dovetail faces, while that face on the Improved Double underreamer cutter slopes downwardly and outwardly in relation to the plane of the outer dovetail faces. The upper face of the cutter body which is caused by the removal of the metal to produce the dovetails, differs in its angularity to the improved Double underreamer cutter in that the face on the old style is nearly horizontal, while this face on the

(Deposition of W. W. Wilson.)

improved Double underreamer cutter slopes downwardly and outwardly. The bearing face on the inside of the old-style Double underreamer cutter differs from that of the new style Double underreamer cutter in that it is wholly and entirely upon the shank of the cutter in the old-style, while in the new style this bearing-face has been brought down so that it is largely upon the inner face of the body of the cutter and extends outward upon the laterally-extended portions of the cutter body.

Mr. LYON.—It will be noted on the record that in giving this answer so far as the witness has referred to Complainant's Exhibit Improved Double Reamer and Cutters, Complainant's Exhibit Old Style Double Reamer and Cutter No. 1, and at this point refers to Complainant's Exhibit Wilson Patent.

Mr. BLAKESLEE.—We will admit that he is inspecting the exhibit, but we do not take it that he is definitely referring to these exhibits. The answer, we take it, is responsive to the question so far, and while these exhibits are before him, it is to be assumed that the answer is with respect to the Double underreamer cutters as he is acquainted with them, as indicated by his previous testimony.

Mr. LYON.—The statement of counsel for Complainant is objected to for the reason that the witness in answering the question has thus far continuously handled the said exhibits and made his comparisons directly therefrom, bending over the said exhibits as they were on the floor before him. [227]

Mr. BLAKESLEE.—We still contend that he is

(Deposition of W. W. Wilson.)

not referring, however, in his answer, by limitation to these exhibits. We concede that he has them before him and is inspecting them as he answers.

A. It is to be noted that the witness was not informed that he was not to refer particularly to any exhibits. However, I could have made the answers without so doing, if necessary. The bearing-face or expansion-bearing at the back of the cutters differs from the old-style Double underreamer cutter from that of the new or improved style Double cutter in that there is a partial cutting away on this face on the improved underreamer cutter near the center thereof in *in* a vertical line, by means of a rounded cavity which divides its bearing-face into two parts, while upon the old-style underreamer cutter no such notch appears. The body of the cutter on the old-style Double underreamer cutter maintains the same or nearly the same width as that measured across the extreme outside edges of the supplementary dovetails. The body of the cutter in the Double improved underreamer cutter extends laterally considerable distance beyond the outside edges of the dovetails on the shank of the cutter, thus producing a definite widening of the cutter body as compared with the shank. The placing of the cutter-expanding bearing down upon the body of the cutter permits a more stable supporting of the cutter against the underreamer body or parts thereon than is the case in the old-style Double underreamer cutter where the same is placed upon the shank solely. The increased width of the cutter caused by widening of the

(Deposition of W. W. Wilson.)

body of the *improve* Double underreamer cutter makes a better underreaming cutter than the old-style, for the reason that it embraces more of the circumference of the circle produced thereby.

Q. 32. (By Mr. BLAKESLEE.) Please compare the improved Double reamer cutter with the old-style Double reamer cutter with respect to its length of life. [228]

A. The length of life of the improved Double underreamer-cutter is greater than that of the old-style Double underreamer cutter for the reason that there is less chance for breakage of the improved cutter, due to the fact that the cutter-expanding-bearing is placed down upon the body of the cutter, thus better supporting the cutter against sidewise rotation, and also relieving a great amount of strain from the cutter-shank when in reaming operation by reason of the fact that the cutter-faces are braced against collapsing at a point more nearly in line with the pressure exerted thereon. Also, there is more metal in the body of the cutter of the Double improved underreamer than in the body of the cutter of the old-style Double underreamer, which permits the cutter to be dressed out more times before the body of the cutter is reduced to such a point as to become worthless. Also, the improved Double underreamer-cutter should have longer life than the old-style Double underreamer-cutter by reason of the fact that the increased width of the cutter body permits a wider space of cutting face thereon and, therefore, a greater distribution of the points where the impact

(Deposition of W. W. Wilson.)

of the cutter meets the rock or hard formation in the hole, thus causing less wear at any one particular point thereon.

Q. 33. You have testified that a portion of the stress exerted upon the shank of the improved Double reamer cutter is taken by the lateral enlargements of the body of the cutter. What effect does this have, if any, with respect to the dimensions of the shanks of the cutter or dimensions of the shanks so permitted.

Mr. LYON.—Objected to as leading and suggestive.

A. In the old-style Double underreamer-cutter the sole means of prevention of rotation of the cutter in the body are upon the shank of the cutter, thus requiring a large width of [229] shank proportionally, and very strong dovetails to support its action. In the improved Double underreamer-cutter with cutter-expanding-faces on the outer edges of the body of the cutter, the increased widening of the bearing of the cutter against the body of the cutter, being more in line with the points of pressure, tend to very strongly support the cutter against rotative action independent of any support given thereto by the cutter-shank, which permit smaller and fewer dovetails to be used and also of the narrowing of the cutter-shanks.

Q. 34. (By Mr. BLAKESLEE.) By what part of the cutter of the Double improved underreamer is the up-thrust or upwardly directed stress imparted to the body of the reamer?

(Deposition of W. W. Wilson.)

A. The downwardly and outwardly inclined face at the very top of the cutter-shank.

Q. 35. Will you please now compare the cutter of the improved style Double under-reamer with a cutter of Complainant's Exhibit Wilson Patent, as to the leading features thereof.

A. Both underreamer cutters consist of an enlarged portion or body surmounted by a narrower portion or shank. In the shank of the Wilson under-reamer-cutter is a pocket 18 cut part way through the cutter for the reception of the spring-actuated means. In the Double underreamer-cutter there is a slot cut completely through the cutter-shank for the reception of the spring-actuated means. Upon the shanks of both the cutters there are shoe-notched faces, the same as designated at 30 in the Wilson underreamer patent. Upon the sides of the shanks of the Wilson underreamer-cutter and the Double underreamer-cutter are ribs for engagement of suitable members on the lower portion of the underreamer body. The cutter-expanding faces on both cutters are placed on the upper inner face of the cutter body, and in both cutters extend to the widest dimensions of the cutter body. In both underreamer-cutter a large amount of metal is present [230] in the body part of the cutter as compared with that in the shank. In the Double underreamer improved cutter the cutter-expanding base is divided into two parts by a rounded cavity at its center. In both cutters the cutter-expanding bearing-faces are placed as near as possible in line

(Deposition of W. W. Wilson.)

with the cutting edges, that is, down as low as possible on the inner face of the cutter body. In the Wilson underreamer-cutter the face of the shank shown in Figure 9 is continuous and unbroken except by the pocket 18. In the Double underreamer-cutter this face is broken by the slot cut clear through the cutter-shank for the reception of suitable spring-actuated means, and also by a large V-notch cut in the cutter-shank to permit the cutter to collapse over the lowest portion of the underreamer body. The horizontal face of the Wilson underreamer-cutter is shown just above the rounded portion 16, being at the top of the cutter body, and also the face of the extreme top of the cutter-shank, are at right angles to the plane of the dovetails or to a vertical line which constitutes the axis of the underreamer body when the cutters are expanded. These shoulders in the Double improved underreamer-cutter slope slightly downwardly and outwardly.

(By consent of counsel an adjournment is now taken until Saturday, April 11, 1914, at 10 o'clock A. M., at the same place, to wit, the office of Raymond Ives Blakeslee, solicitor for complainant.)

[231]

Office of Raymond Ives Blakeslee,

Saturday, April 11, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was con-

(Deposition of W. W. Wilson.)

tinued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Direct Examination (Resumed).

(By Mr. BLAKESLEE.)

Q. 36. Will you please particularly compare the disclosures of Complainant's Exhibit Wilson patent with a cutter or the cutters of "Complainant's Exhibit Improved Double Reamer and Cutters," but only as to such latter exhibit with respect to the cutters themselves, and the co-operating features upon the body of the exhibit reamer.

Mr. LYON.—The question is objected to on the ground that in so far as the question calls for any comparison of the body portion of Complainant's Exhibit "Improved Double Reamer," the same is irrelevant and immaterial to the issues of this suit.

A. The cutters shown in Figures 7, 8 and 9 of "Complainant's Exhibit Wilson Patent" are similar to the cutters in "Complainant's Exhibit Improved Double Underreamer and Cutters" in the following particulars: That they both consist of a shank or narrow portion below which is a larger or wider portion or body-portion 4 which widens abruptly from the shank portion of the cutter as shown at the shoulder 16 of the patent. Upon the inner face of the cutters there is a bearing surface 4³ which in the Wilson patent contacts with two widely separ-

(Deposition of W. W. Wilson.)

ated spreading-bearings and in the Double improved underreamer-cutter contacts with two separated spreading-surfaces by reason of the notch or circular groove cut in the center of this bearing upon the cutter. On [232] both cutters there are dovetail shoulders 4² in the patent. However, in the Double improved cutters shown in the exhibit, these dovetail shoulders are merely divided into two parts by reason of the notch cut into the shank of the cutter. This notch has no counterpart in the Wilson underreamer-cutter. The enlarged portion 4 of the Wilson underreamer-cutters and the similar enlarged portion or body portion of the Double improved cutters permits a large quantity of metal in both cases to be placed in this portion so as to permit long wear and repeated dressing. Both cutters are provided with a shoulder or shoe-notch 30, to assist in their collapsing. The Wilson underreamer-cutter has near its upper end a recess 18, for the reception of the spring-actuated means. The improved Double underreamer-cutter has near its upper end a slot cut completely through the shank for the reception of the spring-actuated means. In both cutters the inner bearing-faces 4³ contact with the body at the extreme outer edges of the cutter-body, 4, which points are much further apart than any points on the cutter-shank.

Q. 37. (By Mr. BLAKESLEE.) Please a little further compare the cutters of the Complainant's Exhibit "Wilson patent" and the cutters of the im-

(Deposition of W. W. Wilson.)

proved Double reamer exhibit, with respect to the location of the in-thrust bearings.

A. In both of the underreamer-cutters shown in the patent and in the improved Double underreamer-cutter the in-thrust bearings are located upon the enlarged portion of the cutter or body as shown at 4 in the patent, the location being the overhanging edges or parts of the body extending laterally beyond the shank in the Wilson Underreamer-cutter and also on the Double underreamer-cutter.

Q. 38. What can you say with respect to any other stresses which are taken care of by the engagement of the cutters at their body portions in both of these exhibits with the bodies [233] of the respective reamers, when the cutters are in expanded positions?

Mr. LYON.—Objected to on the ground that it is irrelevant and immaterial in view of complainant's election to stand upon claims 16 and 17 of the patent in suit, no charge of infringement being made by the defendant of any other claims of the patent in suit.

Mr. BLAKESLEE.—The previous record shows our position and contentions in this respect.

A. The cutters in both cases in drilling operations have pressures applied to them to cause them to be forced upwardly and inwardly, and, in some instances, outwardly, on the cutter body. The surfaces of the cutter bodies at the upper edge of the shoulder 16 is shown in the Wilson patent to contact with thrust-bearings 10', to assist in taking the up-

(Deposition of W. W. Wilson.)

thrust of the cutter body. This is shown to be done in exactly a similar manner on the cutters of the Double improved underreamer. The in-thrust face 4³ in both instances takes the inward pressure of the cutter by contacting with suitable body portions, and also prevents the cutter being twisted or rotated in any manner which might cause the cutter to be twisted out of the body. This greatly relieves the shanks of the cutters in both cases from these strains.

Q. 39. (By Mr. BLAKESLEE.) You say that the notch on the body of the cutter of the improved Double reamer exhibit has no counter-part in the cutter construction of "Defendant's Exhibit Wilson Patent." What is the result or effect obtained by providing this notch?

A. I take it you mean the transverse notch on the inside of the cutter-shank.

Q. 40. No. I mean the notch that runs length-wise of the cutter on the body of the cutter.

A. The same open space between the prongs on the cutter [234] body of the Wilson underreamer permits a contacting of the cutter with the body only as two separated portions on the Wilson cutter. The same action is accomplished in the Double underreamer by providing a notch in the center of the cutter body on the inside which notch divides the spreading-surface into two separate parts.

Q. 41. And how much of this surface at each side of the notch cooperates with a spreading-surface in the improved Double reamer exhibit?

A. The entire width, from each side of the notch

(Deposition of W. W. Wilson.)

to the outer edges of the cutter body.

Q. 42. What comparison can you make as between the cutters of "Complainant's Exhibit Wilson Patent" and the cutters of "Complainant's Exhibit Improved Double Reamer and Cutters" with respect to the effect produced by the enlargement of the bodies of the cutters and at the cutting or operative ends thereof?

A. This increased width permits in both cases the cutters to occupy a greater arc of the circle produced by the outer edges of the cutters when in expanded position, and which is the circle to which the hole must be reamed. It is an established fact that the larger the portion of this circle is covered by the cutters the more of the hole is reamed at each stroke and the fewer strokes at a certain level are necessary to cover the entire circumference of the hole, and thus completely ream the same. Also oftentimes there are hard spots in the walls of the hole which a narrow cutter will slip past either on one side or the other, requiring a continued reaming at that point in the hope that the cutter will strike just in that particular relation to the circumference of the hole so as to cut off the projecting hard spot. If the cutter is wider and occupies a larger portion of the circumference, this can be accomplished in much less time. Also with narrow cutter reamers this action often tends to start [235] the reamer reaming down on opposite sides of the hole in position of the two cutters, this preventing the underreamer from turning, and causing what is known as "key-seat-

(Deposition of W. W. Wilson.)

ing” the hole or the production of two reamed slots down on opposite sides of the hole, while the rest of the hole is not reamed. Thus the driller may believe the hole to be reamed down to a certain depth, but when there is an attempt to lower the pipe to this point it is found impossible, because the pipe hangs up on the unreamed portions of the hole. This causes much difficulty and delay, as it is very difficult to ream a hole after it has once become key-seated, particularly with a reamer having narrow cutters. This difficulty has been almost entirely overcome by the widening of the cutters at their cutting edge so as to embrace as much possible of the circumference of the hole. Also, the increased width of the cutter caused the definite points where the blow is taken on the cutters to be distributed over a greater distance, and thus the wear of the cutter in reaming is reduced, making the cutter ream more of a hole without withdrawing and redressing the cutters.

Q. 43. Do the observations which you have made this morning with respect to the cutters of the improved Double underreamer exhibit here apply equally and with respect to the various features of the cutters to the cutters of the improved Double reamer, as found in the market, with which you have testified you are familiar, and, if not, point out any distinctions which you wish to make?

Mr. LYON.—Objected to as leading.

A. The only difference which I note is that the cutters of the underreamer shown in “Complainant’s Exhibit Improved Double Reamer-cutters” seem to

(Deposition of W. W. Wilson.)

contact with the body on the upper lateral extended faces of the cutter body in certain positions when the cutters are expanded. In the Double improved underreamers which I have noticed in the field these points do [236] not contact except possibly after a large amount of wear has occurred. Otherwise they are the same.

Q. 44. (By Mr. BLAKESLEE.) How, if in any manner, would you account for this difference?

A. This is due to the fact that the cutters in the reamer body are extensively worn.

Q. 45. At what particular points would such wear result in such variations?

A. The dovetail shoulders on the reamer body and the corresponding shoulders of the cutters have become worn, permitting a large amount of lateral play of the cutters, and also the up-thrust-bearing on the reamer body which contacts with the extreme upper end of the cutter-shank has become appreciably worn.

Mr. BLAKESLEE.—As far as now advised, this completes the direct examination of this witness, and counsel may cross-examine. We reserve the right to recall the witness, if necessary or desirable.

Mr. LYON.—Without waiving the objection to the taking of the deposition of this witness, and without waiving the motion to strike such deposition from the record on the ground stated in the objection and notice heretofore given, but subject thereto and to the ruling thereon, and the cross-examination of the

(Deposition of W. W. Wilson.)

witness to abide and follow such ruling, I will cross-examine the witness.

Mr. BLAKESLEE.—We wish to have it appear of record that we are with all possible diligence making out our *prima facie* case, this action having been set for final hearing May 20 of this year. We do not understand that the pendency of any motion such as counsel has brought with respect to the testimony of the previous witness, E. C. Wilson, should be allowed to interfere by its mere pendency with our showing of diligence in this respect, without order from the Court, which has not been obtained, so far as we know. [237]

Cross-examination.

(By Mr. LYON.)

Q. 46. Please take one of the cutters of “Complainant’s Exhibit Wilson Underreamer” and compare the same in detail with the showing of the drawings of “Complainant’s Exhibit Wilson Patent,” having particular reference to the showings of such cutters as set forth in figures 1, 3 and 8 thereof, and state any differences which you may find.

A. The shoe-notch 30 shown in Figure 8 is placed higher up on the cutters shown in the “Exhibit Wilson Underreamer” and is less pronounced. The slight bevel shown in the reamer-cutter in Figure 8 at the upper left hand corner of the shank does not now exist on the cutter shown in the “Complainant’s Exhibit Wilson Underreamer.” The two slight round depressions at the sides of the dovetailed ways at their lower end are not shown in the patent draw-

(Deposition of W. W. Wilson.)

ing, and are for the purpose of machining. The small depressions in the upper case of the shoulders produced by the lateral extension of the body of the cutter is not shown in the patent drawing and is for the purpose of certain processes in setting the reamer prior to its use in the hole. The beveled face at the lower inside of the cutter-shank is carried down lower on the body face 4³ in the cutter of "Complainant's Exhibit Wilson Underreamer" than in the patent.

Q. 47. In your last answer you have referred to "body-face 4³" as the extension of the cutter from side to side and not simply the expansion bearing-faces of the cutters; is that correct?

A. The face 4³ is the expansion bearing-face of the cutter.

Q. 48. And the part which is the cutter of "Complainant's Exhibit Wilson Underreamer," which you state has been carried down further, is a part which extends between these two bearing-faces [238] 4³; is that correct? A. Yes, sir.

Q. 49. And there is a similar part, although not extending down as far, shown in figure 8 and also in figure 3 of the drawings of the Wilson patent No. 827,595, "Complainant's Exhibit Wilson Patent"? Is that correct? A. Yes, sir.

Q. 50. In the device of "Complainant's Exhibit Wilson Patent," what do you understand to be the principle of action in the expansion of the reamer?

Mr. BLAKESLEE.—Objected to as not cross-examination. And the attention of the Court is

(Deposition of W. W. Wilson.)

called to the objection registered by the defendant's counsel upon direct examination of this witness with respect to inquiries other than those directed at the cutter construction. Our position in this case is that the election made on the charge of infringement as shown in the record makes such charge concern the cutters and the co-operating parts of the bodies, with the assumption of suitable means for causing expansion and contraction, but does not concern the principles of expansion and contraction, and, apparently, that contention is borne out by the objections of counsel.

Mr. LYON.—I do not desire to argue objections on the record and will simply state that defendant's position is that claims 16 and 17 are for underream-cutters as an article of manufacture, and have nothing whatever to do with such cutters so far as their relations to other portions of the reamer are concerned, and said claims must stand or fall upon the cutters as cutters *per se* and alone. But that in view of the nebulous character of complainant's contention that such claims include or involve something other or different from the cutters *per se*, we insist it is both proper and necessary to develop the differences [239] which exist between the structures disclosed by the patent in suit and the alleged infringing device.

Mr. BLAKESLEE.—We do not think there is anything nebulous save and except that the word "nebulous" involves plurality, and we have plurally stated our position on the record as to our contention and

(Deposition of W. W. Wilson.)

election. The further objection is made that the question is indefinite and involves sweeping conclusions and not definite statements of findings.

A. The action of expansion of the underreamer shown in the patent is that of pivotal suspended cutters being expanded by introducing wedge-shaped pieces between them near their lower ends.

Q. 51. (By Mr. LYON.) The wedges that you refer to comprise the beveled faces 17 of the so-called forks or prongs and the spreading-bearings 9 on the sides of such prongs? Is that correct?

A. Yes, sir.

Q. 52. What part of the underreamer-cutter in this exhibit contacts with the spreading-bearings 9?

A. That portion of the expansion bearing-faces 4³ which lies outside of the extreme width of the shank, as shown in Figure 9.

Q. 53. Is there any other portion of these bearing-faces 4³ than that to which you have referred in your last answer?

Mr. BLAKESLEE.—The question is objected to as indefinite. Does counsel mean, are there any such portions or do any such portions enter into any such action?

Mr. LYON.—Will you please read the question?
(The notary reads the question.)

Mr. LYON.—That question is all right, just as it stands.

A. In the cutter Figure 9 there is shown extensions of these faces connecting each other, which

(Deposition of W. W. Wilson.)

portion is in use in any action of the underreamer-cutter. [240]

Q. 54. (By Mr. LYON.) Does that portion to which you have last referred in your reference to figure 9 of "Complainant's Exhibit Wilson Patent" bear upon anything either in expansion or contraction or normal operation of the bits or cutters in underreaming? A. No, sir.

Q. 55. In your understanding of the English language would you call that portion of such showing, then, a bearing-face? A. No, sir.

Q. 56. Do you understand that the showing of figure 9 of Complainant's Exhibit Wilson Patent" is different from the showing of figures 3 and 8 with reference to the expansion-bearing-faces or bearing-faces 4³ of the cutter? A. No, sir.

Q. 57. I show you "Complainant's Exhibit Wilson File Wrapper and Contents," and call your particular attention to a photo print of the drawing therein endorsed on its back "Mail Room Jun. 18, 1906, U. S. Patent Office, Exhibit 'A,' E. C. Wilson Underreamer," and ask you to examine the same and state if you understand such drawing.

Mr. BLAKESLEE.—Objected to as not cross-examination.

A. I do.

Q. 58. (By Mr. LYON.) In this drawing to which I have last called your attention you find a view, a side elevation, of the cutter?

Mr. BLAKESLEE.—The same objection to any questions on this exhibit.

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 59. (By Mr. LYON.) Does this view correspond with the view of figure 8 of "Complainant's Exhibit Wilson Patent" in so far as the showing of the bearing-face or expansion-bearing-face 4³ of the cutter and the metal projecting between the two bearing-faces 4³ are concerned? [241]

A. Yes, sir.

Q. 60. Comparing now this view of this photo print to which I have directed your attention with one of the cutters of "Complainant's Exhibit Wilson Underreamer" in the particular to which your attention has been last directed, to the expansion-bearing-faces 4³ and the metal extending there between, please state any differences that exist there between.

A. There is a slight difference in the amount of metal. However, it is simply one of degree as to the extension of the metal between the bearing parts.

Q. 61. Taking now one of the cutters introduced in evidence as "Complainant's Exhibit Old Style Double Reamer-Cutter No. 1," the thrust-bearing on the inner face of this cutter extends entirely across the width of the cutter, does it?

A. It extends entirely across the width of the cutter-shank.

Q. 62. Is it not wider than the cutter-shank?

A. No, because in this cutter there exists an auxiliary dovetail which forms a part of the shank.

Q. 63. Such thrust-bearing-face extends in an unbroken plane the full width of the shank and the

(Deposition of W. W. Wilson.)

auxiliary dovetail, does it?

A. It extends the full width of the shank.

Q. 64. Is it not wider than the shank?

Mr. BLAKESLEE.—I object to this as having been just answered a question or two before.

A. I have stated that the auxiliary dovetails in this instance are a part of the shank.

Q. 65. (By Mr. LYON.) Then I misunderstood your criticism which apparently is that this thrust-bearing is upon the shank of the cutter and not upon the body of the cutter, as the shank and body are differentiated by you in your testimony. Is that it? [242]

A. This thrust-bearing is upon the shank of the cutter in the old-style Double underreamer-cutter No. 1.

Q. 66. And the shank has two shoulders extending out at right angles from the side at the upper end of the shank, and the inner faces of such shoulders form a continuation of the thrust-bearing face of the cutter? Is that correct?

A. Yes. The inner-bearing-face extends the full width of the cutter-shank, or that part of the cutter above the lower or enlarged portion of the cutter.

Q. 67. And the cutter is enlarged laterally by the right-angled shoulders just below the V-notch utilized in expanding the cutter? Is that correct?

A. In this instance, slightly; yes. This is probably due to its use in the upsetting operations in dressing the cutter.

(By consent of counsel an adjournment is now

(Deposition of W. W. Wilson.)

taken until Saturday, April 18, 1914, at the office of Raymond Ives Blakeslee, Esq., solicitor for complainant, at the hour of 10 o'clock A. M., with the understanding that if either counsel is engaged in other litigation at that time a further adjournment shall be taken.)

Office of Raymond Ives Blakeslee, Esq., Solicitor
for Complainant.

April 18, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, by consent of counsel a further continuance is now taken until Wednesday, April 22, 1914, at this same place, at the hour of 10 o'clock A. M. [243]

Office of Raymond Ives Blakeslee, Esq., Solicitor for
Complainant.

Wednesday, April 22, 1914, 10 A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 68. Referring to complainant's exhibit "Old Style Double Under Reamer Cutter No. 1," what is it that you say that the enlarging laterally by the

(Deposition of W. W. Wilson.)

right angle shoulders just below the V-notch utilized in expanding the cutter, of the inner bearing-face, is probably due to its use in the upsetting operations in dressing the cutter as referred to in your answer to question No. 67?

A. Because I have seen a large number of these cutters in the field where no such enlargement exists, the cutter body being a continuation due to the greater width than the thrust-bearing surface.

Q. 69. Then in this answer you were referring to the lateral enlargement of the cutter complainant's exhibit "Old Style Double Reamer Cutter No. 1," below the thrust-bearings, which enlargement in this case is approximately a quarter of an inch on each side.

A. In my answer to question 67 I referred to the slight enlargement of the cutter body laterally just below the inner bearing-face of the cutter. The auxiliary dovetails form a slight [244] enlargement of the shank of the cutter just below the V-notch referred to, the same as the main dovetails are a slight enlargement of the shank at the top of the cutter.

Q. 70. But such enlargement laterally of the thrust-bearing face of the cutter is not formed in the upsetting operations in dressing the cutter, is it?

A. No; it is formed in the machining operations.

Q. 71. And does this lower offset or right-angular shoulder of what you have termed the body, and to which you have referred this morning, which has apparently, in your opinion, been formed in the upsetting operations in dressing the cutter?

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 72. And to this extent your answer to question 67 was not clear? A. Yes, sir.

Q. 73. What is the purpose in the underreamer of complainant's exhibit "Wilson Patent" in having the expansion-bearing-faces 4³ terminated in rounded corners or bearings, identified by the numerals 16 in the drawings?

Mr. BLAKESLEE.—We object to this question as not the best evidence. The patent should speak as to this, as the question is limited to the patent disclosure.

A. The upper points of the bearing surfaces 4³ or contact with the bearing-faces 17 when the cutters are in collapsed position as shown in figure 1, and as the cutter travels from expanded to collapsed position, or vice versa, these upper edges of the faces 4³ ride over bearing-faces 17 and 9 until the cutters are in nearly completely expanded position, when the cutter-face 4³ contacts with the bearing-face 9.

Q. 74. Is it your understanding of the device of Complainant's exhibit "Wilson's Patent," the surface identified by the numeral 9 by reason of such respective surfaces diverging [245] from one another as they approach the upper end of what might be termed the forks or prongs, cause a portion of the expansion of the bits or cutters? A. Yes, sir.

Q. 75. And it is the bearing-face or expansion-bearing-face 4³ of the cutter which contacts with this surface 9 to so expand the bit or cutter?

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 76. What is the principle of that operation?

Is it a wedge action?

Mr. BLAKESLEE.—Objected to as not cross-examination, and under the limitations imposed upon the scope of this charge of infringement it is not concerned in the issue involved; and further that it is calling for a conclusion.

A. Yes, sir.

Q. 77. (By Mr. LYON.) Is there any rocking or tilting action of the surfaces 4³ of the cutter of complainant's exhibit "Wilson Patent" on this surface 9 in the expansion of such cutters?

A. The cutters expand over the surface with a pivotal action. The center of which pivotal action being near the top of the cutter-shank, there must be some slight rolling of this surface 4³ up over the surface 9. They are not in complete contact throughout the entire travel of the cutter while these faces are in contact. The complete contact is broken as the cutter comes down, the cutter then being at the upper edge of the face 4³ against the bearing-face 9.

Q. 78. Referring now to complainant's exhibit "Improved Double Reamer and Cutters," and to either one of the cutters of such exhibit, do the shoulders formed by the right-angle extension of the body of the cutter beyond the width of the shank contact with any portion of the body-portion or mandrel of the Double reamer to cause the tilting action of the cutter? [246]

(Deposition of W. W. Wilson.)

A. This portion of the cutter, as the cutter nears expansion from the collapsed position, slides with a rocking motion on the lower bearing-face of the hollow-slotted extension of the reamer body, causing a pivotal action at or near this point while the upper ends of the cutters are drawn closer together by reason of the upwardly and inwardly inclined dove-tailed ways on the reamer body.

Q. 79. Now, Mr. Wilson, please identify exactly what you mean in your last answer by "this portion." Is it the top shoulder of the laterally extended parts, to which I have referred? Or is it the inner surface or face?

A. The inner surface or face as it contacts with the corner at the lower end of the parallel bearing-faces of the Double underreamer body.

Q. 80. And with what is that portion of this same surface which lies just above the particular portions to which you have referred and in line with the width of the shank portion, in contact?

A. It is a traveling contact with this corner at the lower end of the parallel bearing-face of the underreamer body, forming a line contact horizontally when the reamer-body axis is vertical, which line contact travels down over the entire inner bearing-face of the Double underreamer cutter.

Q. 81. I will ask that question No. 78 be read to the witness and that he may answer the same.

Mr. BLAKESLEE.—Objected to as indefinite in view of the previous use of the word "shoulder" in the testimony in this case, and we would ask that the

(Deposition of W. W. Wilson.)

question be made a little more specific as to the parts designated as "shoulders."

Mr. LYON.—The witness has identified the inner surfaces or faces formed by the lateral projections of the cutter of the so-called "Improved Double Reamer," and the question is now [247] directed to the shoulders formed by such projections, such shoulders being very apparently at the top of such lateral enlargements.

A. No. This shoulder, as I understand it now, meaning by "shoulder" the part above or at the top of the lateral extension of the cutter body, has no definite action in expanding the cutters.

Q. 82. (By Mr. LYON.) What purpose has this shoulder in the Double so-called improved underreamer, as you understand same?

A. The shoulder is made necessary by the lateral extensions of the expansion-bearing-face on the cutter body, and is produced by a widening of the cutter body laterally outside of the width of the cutter-shank.

Q. 83. Then in your opinion these shoulders to which we have just referred as "shoulders" perform no function whatever in the so-called Double improved underreamer, either in expansion of the bits or otherwise?

A. They permit the widening of the cutter-bearing-surfaces so that as the cutter nears the expanded position it is much better protected against rocking motion, and permits of a greater width of the cutter body being used.

(Deposition of W. W. Wilson.)

Q. 84. Now, please answer the question as to whether in such so-called improved Double reamer the shoulders themselves are used for any purpose, so far as you understand such Double improved reamer.

Mr. BLAKESLEE.—If the question be not indefinite, we assume that counsel is still referring to top terminal portion of the lateral extensions when he uses the term “shoulders.”

Mr. LYON.—I am referring to the part identified by the witness as shoulders as distinguished from the portion of the thrust-bearing face. [248]

A. No; this part plays no definite action in the expanding of the cutter, outside of at a certain instant in the expansion of the cutter. This shoulder is in contact with the lower corner of the parallel bearing-surfaces.

Q. 85. (By Mr. LYON.) Please explain what instant you refer to.

A. When this shoulder comes in contact with the parallel bearing-surfaces, when the cutter slides into expanded position.

Q. 86. Is that not the extreme upper point of the inner face to which you have last referred, rather than the top or shoulder?

A. This shoulder which you have referred to, as I understand it, is the point of intersection of the plane of the inner bearing-face of the upwardly and inwardly inclined face at the top of the cutter body.

Q. 87. No. The shoulder I refer to is that shoulder which you see, if you will take one of the said

(Deposition of W. W. Wilson.)

cutters and look down directly upon it from the upper end of the shank, and the shoulder which extends at right angles to the shank of the cutter, and with this statement, please answer the question: Does that contact with any portion of the body of the Double underreamer in expanding the cutters in any manner?

Mr. BLAKESLEE.—Objected to as indefinite, because when you look down upon the cutter in the manner specified, you see extended faces of the lateral extensions and also the terminal portions of those faces.

A. What I have been referring to and understood as being the shoulder referred to, was simply the line of intersection of those two planes given above. The top of the shoulder or upper side of the lateral extension of the cutter body does not contact to form any part of the expansion of the cutter.

Q. 88. (By Mr. LYON.) The top of the shoulder or tops of [249] the shoulders formed by laterally extending the cutter in the cutter or bit of complainant's Exhibit "Wilson Patent," does contact with the wedge surface or surfaces 9? Is that correct?

A. Yes, sir.

Q. 89. And for what purpose?

A. They ride up in contact with the surfaces 17 and 9 to cause the expansion of the cutter.

Mr. LYON.—Let the record show that the last two questions and answers are at this point reread to the witness, and he can make any explanation he wants

(Deposition of W. W. Wilson.)

to. (The last two questions and answers are read by the notary.)

A. In my last answers I have again referred to the upper edge of the bearing-face shown at 4³ in the patent drawing. The top faces of the lateral extensions of the cutter body perform no part in the expansion and contraction of the Wilson cutter.

Q. 90. What function does the surface in the cutter of the complainant's exhibit "Wilson Patent" which extends at right angles to the shank and lies above the upper end of the bearing-surface 4³, perform in the expansion of the cutters in the Wilson underreamer?

Mr. BLAKESLEE.—Objected to on the ground that it is indefinite.

A. They ride up on the surfaces 17 and 9 while the cutter is traveling from collapsed to expanded position. The purpose of this riding is to cause expansion of the cutters. I refer in this answer to the rounded portion at the top of the inner thrust-bearing-faces 4³ on the cutter shown in complainant's exhibit "Wilson Under Reamer."

Q. 91. (By Mr. LYON.) Is there any correspondence in the action and purpose of the contact of the portion you have just referred to with such surfaces 17 and 9 in the Wilson underreamer, [250] between the complainant's exhibit "Improved Double Reamer and Cutters" in expansion of the cutters, by any similar contact of the shoulder formed by the lateral extension of the body portion, beyond the width of the shank, in the improved Dou-

(Deposition of W. W. Wilson.)

ble cutter and reamer, and, when I use the term "shoulder" in this connection, I refer to the same shoulder to which you have referred in your last answer as being "the rounded portion at the top of the inner thrust-bearing-faces 4³ on the cutter shown in complainant's exhibit "Wilson Under Reamer."

A. There is no correspondence in the action as far as the expansion and contraction of the cutters are concerned.

Q. 92. The wedge action in the so-called improved Double reamer is accomplished entirely by the lower wall of the V-shaped groove in the shank of the cutter at the top of the thrust-bearing, and a portion of which thrust-bearing extends up onto the shank of the cutter in complainant's exhibit "Improved Double reamer is accomplished entirely by rect?

A. The wedge action or first part of the expansion of the Double underreamer cutter is as stated in the question.

(By consent of counsel an adjournment is now taken until this afternoon at 2 o'clock, at this same place.)

Office of Raymond Ives Blakeslee, Esq., Solicitor
for Complainant.

Wednesday, April 22, 1914, 2 o'clock P. M.

This being the time and place to which the further

(Deposition of W. W. Wilson.)

taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant. [251]

W. W. WILSON, recalled.

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 93. In your last answer you say, "the first part of the expansion," is thus caused. What other part or action is there in expansion in the Double reamer?

A. The second part of the expansion of the Double underreamer-cutter is caused by the inner bearing-faces of the cutters riding upon the parallel bearing-faces of the hollow-slotted-extension, forming thereon a fulcrum for the rocking or tilting of the cutters when the upper ends of the cutters are drawn closer together by reason of the cutter dovetails sliding upward in the upwardly inclined dovetailed ways of the body, thus drawing the upper ends of the cutters closer together and causing the cutting edges of the cutters to be expanded by reason of the fact that they are below the fulcrum point of this tilting.

Q. 94. What size reamer and bits comprise complainant's exhibit "Wilson Underreamer"?

Mr. BLAKESLEE.—Objected to as indefinite.

A. This is a 4½ inch, 15-pound underreamer. That is, it is for a certain type known as 4½ inch 15-pound type.

(Deposition of W. W. Wilson.)

Q. 95. (By Mr. LYON.) Do you know of what size underreamer complainant's exhibit "Old Style Double Reamer Cutter No. 1" was made.

A. No, sir.

Q. 96. What is your best judgment?

A. It is for a small sized reamer. It may be a $4\frac{1}{2}$ inch.

Q. 97. Please explain to us how, according to your understanding, the cutter or bit is prevented from twisting or rotating, as you call it, in the old style Double underreamer?

A. The rotating strain applied on the cutter is transmitted [252] from the body of the cutter to the shank of the cutter where it is resisted by the inner expanding thrust-bearing-face on the one side, and the dovetailed ways on the opposite side.

Q. 98. And how is this prevented in the device of Complainant's Exhibit "Wilson Patent"?

A. By the contact of the cutter-face 4³ with the face 9 on one prong of the underreamer body and the opposite dovetailed ways of the cutters and body may have a small restraining action. However, the fact that the bearing-face 9 is placed almost directly underneath a point where the stress is applied, leaves little or no reaction for the dovetailed ways on the opposite side of the cutter.

Q. 99. Please explain a little more fully what you mean in your last answer by the bearing-face 9 being placed almost directly underneath the point where the stress is applied.

A. The fact that in the Wilson underreamer as

(Deposition of W. W. Wilson.)

shown in the patent the underreamer body is extended down between the lower portion of the underreamer-cutter to a point nearly in line with the cutting edges of the cutters, places this bearing in a position to almost entirely overcome the rotative strains placed on the cutters. Were this bearing higher up on the cutter and closer to the center line of the cutter, greater strains would be thrown on this bearing and on the dovetailed ways on the opposite side of the cutter.

Q. 100. Then the distinction that you have just drawn is due to the location of the bearings 4³ close to the cutting edges of the cutter in the device of complainant's exhibit "Wilson Patent" and when I say close, I mean comparatively low down on the cutter.

A. Partly so, yes. Also due to the fact that these bearings are placed at the outer edges of the cutter body. That is, at points as widely separated as possible. [253]

Q. 101. In the device of complainant's exhibit "Wilson Patent" the bearing-faces 4³ are on the inner side of the bit, the shoulders of which project at right angles to the shank of the cutters, are they?

A. Yes, sir.

Q. 102. And these bearing-faces 4³ contact with the inclined surfaces 9 on the body of the reamer, to cause the final wedge action or expansion of the cutters?

A. On that portion of the body of the underreamer called in the patent "prongs."

Q. 103. And referred to by the figure 9?

(Deposition of W. W. Wilson.)

A. Figure 9.

Q. 104. The initial portion of the wedge action in the device of this Wilson patent is caused by the top of the shoulder coming in contact with and riding on the beveled end or surface 17 of the prong of the reamer? Is that correct?

A. This part of the expansion is caused by that portion of the shoulder at the top of the bearing-face 14 riding against the inclined surface 17.

Q. 105. Is it a portion of the surface 4³ which makes this contact, or is it in reality a part of the top of the shoulder on which these bearing-surfaces 4³ are formed at one side, that causes this initial expansion and wedge action in the device of complainant's exhibit "Wilson Patent"?

A. The line of intersection of these two faces which contact with the surface 17.

Q. 106. Please take complainant's exhibit "Old Style Double Reamer Cutter No. 1," and tell us how much wider, in your opinion, the inner thrust-bearing-surface, below the V-shaped slot in the shank, which causes the wedge action expansion of the bit, would be required to remove the stress of the tendency of such bit or cutter to rotate in such Double underreamer, from the dovetailed ways. [254]

Mr. BLAKESLEE.—Objected to as indefinite and, particularly, as to the wording "stress of the tendency," and, further, as to the removal of such stress, it assumes something contrary to the testimony of the witness. Also objected to as calling for an arbitrary conclusion and an engineering opinion

(Deposition of W. W. Wilson.)

which possibly would require engineering calculation to give a definite and accurate answer.

A. The wider this bearing-surface is the better it would tend to resist and overcome the tendency toward rotary action. However, placed as it is on the shank of the cutters, there would tend to be necessarily great stresses thrown upon this bearing. This bearing, placed as it is, on the cutter-shank, it is almost impossible to overcome the rotating action by simply widening the bearing-surface.

Q. 107. (By Mr. LYON.) Then in your opinion the closer this bearing is brought down to the cutting edge of the bits or cutters the more nearly you will relieve the dovetails of such rotating action or tendency to rotate?

A. Yes; by bringing this bearing-surface down more nearly in line with the cutting edges of the cutters and widening it to the full width of the cutting edges, the tendency toward rotating action is almost, if not completely, overcome.

Q. 108. If the said bearing-surface of complainant's exhibit "Old Style Double Reamer Cutter No. 1" were brought down close to the cutting edge of such cutter, is it possible for you to state how much more such tendency to rotate would be prevented by the widening if such bearing an eighth of an inch on each side?

Mr. BLAKESLEE.—Objected to as calling for an arbitrary conclusion and as necessarily a determination of an engineering problem, and not in that respect cross-examination and not calling for a fact but

(Deposition of W. W. Wilson.)

calling for testimony involving calculation of *of* factors to determine the fact. [255]

A. If this bearing-surface were brought down closer to the cutting edge of this cutter, it would greatly tend to overcome the rotary action. However, this cutter is proportionately very narrow on the cutter face as compared with the underreamer produced today, as the tendency in underreamer improvement has been to widen the cutter faces.

Mr. LYON.—We move to strike out the answer from the record and exclude it from consideration as not responsive to the question, and ask that the question be reread to the witness.

(Question is read to the witness.)

A. No; it is not possible to state how much that would be.

Q. 109. (By Mr. LYON.) I call your attention to letters patent of the United States No. 762,435, dated June 14, 1904, to C. A. O'Donnell and A. G. Willard, with which I understand you are familiar, having testified with regard thereto in the previous litigation to which you have referred in your direct examination. Please examine the device of this patent and state whether you find in the device of this patent the same tendency of the cutters to which you have last referred.

Mr. BLAKESLEE.—Objected to as not cross-examination, and the further objection is made that this is not the proper time and place to present the defense to this action, or purported defense, and the same objection will be noted without repetition as

(Deposition of W. W. Wilson.)

registered against any and all questions put with respect to the subject of this question.

A. Due to the rounding condition of the cutter edges as shown in figure 5 at 22. It would be difficult to say whether or not this rotary action would be present to any large extent.

Q. 110. (By Mr. LYON.) What is the manner in which you understand such rotary action to be resisted in the device of this O'Donnell and Willard patent? [256]

A. It is resisted by the cutters contacting with the partition 3 which is interposed between the cutters in expanded position.

Q. 111. The faces of this partition 3 form the in-thrust-bearings for the cutters, do they?

A. Yes, sir.

Q. 112. And the partition 3 extends from one side or edge of the periphery of the body of the reamer to the other? A. Yes, sir.

A. 113. And the thrust-bearing surfaces of the bits contacting with the surfaces of partition 3, just referred to, contacting therewith to the full width of the bits? A. I believe they do.

Q. 114. And are brought down in close proximity to the cutting edges, are they?

Q. 115. And such bearing-faces of the cutters or bits are extended out at right angles to and are a side face of a shoulder which is wider than the shanks of the bits? Is that correct?

A. I believe so, yes; although it is difficult to tell exactly from the drawings as to where contact existed.

(Deposition of W. W. Wilson.)

Q. 115. The bits of this O'Donnell and Willard patent have shanks, have they? A. Yes, sir.

Q. 116. And the lower ends of the bits are extended out or projected out at right angles to the shank of the bit or cutter, forming the shoulder?

A. Yes, sir.

Q. 117. And there is a single or one-piece bearing-face on the inner side of the bits and extending across the width of the bits at their widened-out portion, and covering all or [257] approximately all of the inner face of such shoulder, is that correct?

A. I believe so.

Q. 118. That is your understanding of said patent, is it? A. Yes, sir.

Mr. LYON.—Cross-examination is closed.

Mr. BLAKESLEE.—Now, reserving our objections to any testimony in this *prima facie* case with relation to this O'Donnell and Willard purported patent, the ruling upon such objections to be abided by, and subject to such ruling I will proceed to interrogate the witness further on this subject.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 119. In the cutters of this purported O'Donnell and Willard patent No. 762,435, how many shoulders do you find on the cutters at the lower ends of the cutters?

A. There is one large semi-circular shoulder extending around the outside of the cutter.

Q. 120. What is the purpose of that shoulder as

(Deposition of W. W. Wilson.)

you make it out from the disclosure of this patent?

A. To take the up-thrust of the cutter by being in contact with the underreamer body.

Q. 121. Please compare the general shape or outline of the shank of each of these cutters with the shank of the cutters of Complainant's Exhibit "Wilson Patent," taking a view of the inner face of the same.

A. The inner face of the Wilson cutter shank is a rectangular piece, while the inner face of the cutters shown in the patent No. 762,435 has parallel top and bottom edges and upwardly and inwardly inclined lateral edges.

Q. 122. Now, projecting the lateral edges of one of these cutters downwardly toward the cutting edge of the cutter, [258] please state where the termini of such projected sides will fall with relation to the cutting edge.

A. It will fall very nearly on the same.

Q. 123. Do you, therefore, find upon the body or lower end of one of these cutters any enlargement which produces a wider cutting edge than would be provided by a projection of the side lines of the shank of the cutter as last inquired about?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 124. (By Mr. BLAKESLEE.) If the side lines of the shanks of the cutters of Complainant's Exhibit "Wilson Patent" are projected downwardly to the cutting edge of the cutter, where will such side

(Deposition of W. W. Wilson.)

lines fall with respect to the lateral extremities of the cutting edge?

A. Some distance within the lateral edges of the cutting edge.

Q. 125. And outside of such extended side lines of the shanks what will be found to exist or be present in the cutters of the Wilson patent?

A. The shoulders or lateral extensions shown at point 16, together with the inner bearing-faces on each side shown at 4³, together with the cutting edge of the cutter below these points.

Q. 126. And will any cutting edge be found to remain outside of the side lines of the shanks of a cutter of the O'Donnell and Willard patent if such side lines are extended downwardly to a zone of the cutting edge?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 127. (By Mr. BLAKESLEE.) Now, if a cutter of complainant's "Improved Double Reamer and Cutters," what is the general shape of the shank of the cutter, viewed from its inner face? [259]

A. Rectangular.

Q. 128. And if the side lines of the shank be extended downwardly to the zone of the cutting edge, what, if anything, is found to be present in the cutter outside of these side lines?

A. Lateral extensions of the cutter-expanding bearing-face, a considerable portion of the cutter body and a considerable portion of the cutting edge of the cutters.

(Deposition of W. W. Wilson.)

Q. 129. What have you to say as to the width of such portions of the cutter lying outside of such extended side shank line, tracing such portion from its top to its bottom.

A. Fully $\frac{2}{5}$ of the entire cutting edge of the cutter lies without these lines.

Q. 130. How as to the maintenance of the width in such outside cutter portion?

A. These outside cutter portions extend the width of the cutter.

Q. 131. And how as to the maintenance of width across these portions of the cutter, comparing any one transverse area with another?

A. It would give about $\frac{2}{5}$ increased area for an increase of width of $\frac{2}{3}$ of the original cutting width.

Q. 132. Comparing these lateral outside cutter portions at the top of the body of the cutter with these lateral outside portions at the bottom of the body of the cutter, what have you to say with respect to the relative width?

A. The relative width is increased the same at the bottom as at the top of the cutter body.

Q. 133. Now, how with respect to the cutter of the O'Donnell and Willard patent in this connection? That is, what do you find in this connection in the O'Donnell and Willard cutter?

A. The increased cutter width at the top of the cutter body has produced no increased width in the cutting edge thereof. [260]

Q. 134. Then please compare the results obtained or effects produced by the provision of the single up-

(Deposition of W. W. Wilson.)

thrust shoulder running around the outer surface of the cutter of the O'Donnell and Willard patent at the top of the body thereof, with the two shoulders upon a cutter of Complainant's Exhibit "Wilson Patent" and the two shoulders upon a cutter of Complainant's Exhibit "Improved Double reamer and cutters," with respect to the dimensions or width of the cutting edge of the cutter.

A. The single shoulder on the cutter of the O'Donnell and Willard patent produces no increased width of cutting edge, while the two shoulders on the cutter of the Wilson patent produces an increased cutting edge equal to their combined width. The same also applies to the cutter of the Double improved under-reamer and cutters as shown in Complainant's Exhibit "Improved Double Reamer and Cutters."

Q. 135. What *so* you make out with respect to the width of the single shoulder or up-thrust bearing the cutter of the O'Donnell and Willard patent, considering it from one end throughout its curved extension to the other end?

A. Its width is very small as compared to its length.

Q. 136. Please compare the width of this single shoulder at its ends with its width at the portions of it between its ends.

A. The width is the same throughout its circumferences.

Q. 137. Compare this curved continuous shoulder of the O'Donnell and Willard patent cutter with the shoulders or lateral extensions of the cutter of Complainant's Exhibit "Wilson Patent" and the cutter

(Deposition of W. W. Wilson.)

of Complainant's Exhibit "Improved Double Reamer and Cutters," particularly with respect to the backs or outer faces of the three cutters.

A. The bearing face on the O'Donnell and Willard cutter causes a jog or shoulder on the back of the O'Donnell and Willard cutter. The shoulders on the Wilson underreamer-cutters and the [261] improved Double reamer and cutters do not form any such shoulder in the backs of the cutters.

Q. 138. What do you make out from the O'Donnell and Willard patent to be the office of this continuous curved rib or shoulder upon the top of the cutter body?

A. It is for the purpose of taking the up-thrust of the cutter.

Q. 139. Do you find any reference in the disclosure of this patent to any other office of such rib of enlargement or shoulder?

A. The outer edges of these shoulders 15 and 15' also engage with the shoe 22' to cause collapsion of the cutters when the reamer is withdrawn from the hole.

Q. 140. Do you find in the cutters of complainant's exhibit "Wilson Patent" and of complainant's exhibit "Improved Double Reamer and Cutters" any parts or features which correspond in their function of office with these shoulders 15 and 15' on the respective cutters of this O'Donnell and Willard patent, and, if so, please designate.

A. The shoulder 30 shown in the figures 7 and 8 and also figures 1 and 3 of the Wilson patent, show

(Deposition of W. W. Wilson.)

a shoulder which contacts with the shoe for the purpose of effecting collapsion of the cutters on withdrawal of the reamer from the hole. The same sort of notch is found on the shank of the cutter shown in complainant's exhibit "Improved Double Reamer and Cutters" on the shank at the outside thereof at about the middle portion of the slot in the shank.

Q. 141. Do you make out from any portion or all of the disclosures of the O'Donnell and Willard patent that those shoulders 15 and 15' of the respective cutters were provided for any other purpose than for imparting up-thrust to the bottom of the socket 2 and for co-operating with the shoe to effect contraction of the cutters? A. No, sir. [262]

Q. 142. Do the lateral bearing-faces 4³ at the tops 16 thereof, or at any portions thereof, referring to the cutter of complainant's exhibit "Wilson Patent," co-operate in any manner with the shoe or casing or with any part of the casing or any object or thing other than parts of the underreamer in causing collapsion of the cutters? A. No, sir.

Q. 143. Do the lateral bearing-faces on the bodies of the cutters of complainant's exhibit "Improved Double Reamer and Cutters" at the tops of such lateral faces or the extensions providing the same, or at any other portions thereof, co-operate in any way with the shoe on the casing or with any object or thing other than parts of the underreamer itself, in producing the collapsing action of the cutters?

Mr. LYON.—Objected to as leading.

A. No, sir.

(Deposition of W. W. Wilson.)

Q. 144. (By Mr. BLAKESLEE.) How do you understand the shanks of the cutters of the O'Donnell and Willard patent to be confined in the construction disclosed in that patent?

A. They are confined in the space formed at the lower end of the underreamer body in the socket between the inner wall thereof and the walls of the partition figure 3.

Q. 145. What sort of a fit is provided between the partition and the inner walls of the socket when the cutters are in expanded position?

A. A reasonably close working fit.

Q. 146. What, if any, effect will that have with respect to any tendency of the cutters to rotate upon a longitudinal axis?

Mr. LYON.—Objected to as leading and suggestive.

A. It is, of course, resisted by contact of the cutter-shank with the space in which it fits. [263]

Q. (By Mr. BLAKESLEE.) Please compare further the shanks of the cutters of this O'Donnell & Willard patent with the cutters of Complainant's Exhibit "Wilson Patent" and of Complainant's Exhibit "Improved Double Reamer and Cutters" with respect to the structural features of the same.

A. The cutter-shanks in the O'Donnell and Willard underreamer patent consist of a plane face on the inside, and on the outside of a curved face, which tapers upwardly and inwardly toward the inside plane face, surmounted at the top by a horizontal plane face and at the bottom joins to the main por-

(Deposition of W. W. Wilson.)

tion or body of the cutter 12. Near the top of the shank of the cutter is the slot called in the patent the "cross-head socket 14," in which spring-actuated means are operated. Above the outer edge of this socket 14 the cutter-shank is tapered off slightly to permit of collapsing action. In the Wilson under-reamer cutter shown in the Wilson Patent, the shank consists of a narrow piece of metal whose sides are parallel planes, whose inside is a single plane. At the line of contact of these planes there are dovetailed ridges 4-square. On the outside of the cutter-shank is an inclined face surmounted by a more steeply inclined face, 30 surmounted by a vertical face 4' and by a slightly angles face above that. On the inside of the cutter-shank near the top is a pocket 18 for the reception of spring-actuated means. The top of the cutter-shank is a horizontal plane surface with the inside edge beveled slightly.

The shank of the improved Double cutter consists of two parallel lateral faces joined at the back by a substantial vertical face. At the line of contact of these faces are dovetailed ribs or edges. The inner face of the cutter shank is broken by a notch consisting of two inclined planes. The top of the cutter shank terminates in a downwardly and outwardly inclined plane. The outside of the cutter-shank consists of a cylindrical or curved edge [264] near the top of which is a notch, and at this point there is a slot cut through the cutter-shank for the reception of the spring-actuated means, and through the lower part of this slot is a hole for the placing

(Deposition of W. W. Wilson.)

of a pin to lock the spring-actuated means in place.

Q. 147. Now, irrespective of the one or single curved rib or shoulder or enlargement upon the cutter of the O'Donnell and Willard patent reamer, and irrespective of the lateral extensions upon the cutter of the Complainant's Exhibit "Wilson Patent," and irrespective of the lateral extensions upon the cutter of Complainant's Exhibit "Improved Double Reamer and Cutters," please compare the action of the shanks of these three cutters with respect to the resistance to the stresses tending to rotate the cutters.

Mr. LYON.—Objected to as assuming a mode of operation and an element or series of elements to be used in co-operation with the cutter not appearing in or material to the issues of this case, which are confined solely to the underreamer cutter as an article of manufacture.

Mr. BLAKESLEE.—Our position in this matter as heretofore stated, is adhered to.

A. The shank of the O'Donnell and Willard cutter tends to resist the rotation by prying action caused by its irregular or crescent shape acting in a similar shaped pocket in the underreamer body.

The prying actions of the Wilson underreamer cutter shown in the Wilson patent tend to resist rotating action by stress being resisted by the dovetails 4-square and by a spreading action which would then be produced by the shank of the cutter on the prongs at the lower end of the underreamer body.

The rotating action will be resisted by the cutter-

(Deposition of W. W. Wilson.)

shank of the Double improved underreamer cutter by the dovetails [265] on one side, and the upper edge of the spreading-bearing on the cutter-shank acting against the hollow-slotted extension.

Q. 148. If the shoulder or rib or continuous bit or shoulder upon the body of the cutter of the O'Donnell and Willard patent were eliminated, please compare the resistance which the cutter would oppose to the rotation of such resistance opposed by the cutter as disclosed in the patent.

A. Very little, *in any*, difference would be made, because the part thus removed would be a very small part of the contacting surface of the cutter and the wedge 3.

Q. 149. What have you further to say in such comparison, taking into consideration the close pocketing of the shank of this cutter between the bowl 2 and the respective face of the partition 3?

A. The closely confined fitting of the cutter-shank would minimize, if not entirely destroy, any tendency of the extended portion to resist rotating movement.

Q. 150. Now, with this single shoulder eliminated from the cutter of the O'Donnell and Willard patent and the shank socketed in the space between the bowl and the partition, that is, with the cutter in expanded position, please state whether or not any rotatory action of the cutter would be permitted.

A. No, sir.

Q. 151. Now, please compare this close confinement of the shank of the O'Donnell and Willard cutter with any confinement which you find present

(Deposition of W. W. Wilson.)

or to exist with respect to a cutter of complainant's exhibit "Wilson Patent" and Complainant's Exhibit "Improved Double Reamer and Cutters?"

A. The confinement in these cases is not so close as in the O'Donnell and Willard patent, for the reason that with the dovetail construction more play must be given to the cutter in its bearing and in its contact with the reamer body in order to permit free expansion and collapsion of the cutter. Also, it has been [266] shown to be better practice to give the cutters will not become packed and jammed by sand or cuttings getting in the working surfaces.

Q. 152. Please state what effect, if any, is produced by the provision of the single bit or shoulder 15 or 15' of the O'Donnell and Willard patent with respect to the amount of stock in the body of the cutter at the cutting edge?

A. There is little or no stock added to the body of the cutter at the cutting edge by the increase laterally by the shoulders 15 and 15' in the O'Donnell and Willard reamer.

Q. 153. Now, from your experience in designing and manufacturing oil well tools, please state whether the disclosure of the O'Donnell and Willard patent would enable you or anyone else equally skilled in the art, considering such disclosure as a specification or written instruction, to construct a cutter having a body either like that of Complainant's Exhibit "Wilson Patent" cutter or Complainant's Exhibit "Improved Double Reamer and Cutter" cutter.

(Deposition of W. W. Wilson.)

Mr. LYON.—Objected to as leading, incompetent, no foundation laid and not the best evidence, and not redirect examination.

A. No, sir.

(By consent of counsel an adjournment is now taken until to-morrow, Thursday, April 23, at 2 o'clock P. M. at this same place.) [267]

Office of Raymond Ives Blakeslee, Esq., Solicitor for
Complainant.

Thursday, April 23, 1914, 2 o'clock P. M.

This being the time to which the further taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Redirect Examination (Resumed).

Mr. BLAKESLEE.—As counsel has objected to the last question for various reasons, and among them that the question is not redirect examination, and as we have objected to any questioning of this witness with respect to the O'Donnell and Willard patent which has been under discussion, and as that objection was registered against questioning as to this evidence when the witness E. C. Wilson was under examination, and as manifestly this is not a time for defendant to present its defenses or make out its case, we can only assume that counsel is making the pres-

(Deposition of W. W. Wilson.)

ent witness his own and is attempting to prove his case in part out of the mouth of this witness produced for complainant. Therefore, still urging the objections heretofore made as against the discussion of this purported O'Donnell and Willard patent during these takings of proofs for complainant, and abiding by such ruling as may be made upon such objection, we will extend the latitude of the examination of the present witness commensurate with the assumption that as to this subject of inquiry he is a witness for the defense. It is urged that we may not be denied our right to cross-examine any witness whose testimony is sought with respect to any subject of defense and, therefore, our further [268] questioning of this witness with respect to this purported O'Donnell and Willard patent will, as stated, be conducted with the broader scope and along the broader lines which would be proper on cross-examination of a witness for the defense, and which we contend under the circumstances are proper with respect to the cross-examination of this present witness on this particular subject. As to any other subjects, the inquiry will be kept within the strict lines of redirect examination.

Mr. LYON.—Counsel for complainant may derive any conclusion that he desires from the argument and statement placed on record by him. This is neither the time or place for an argument of the question involved in his statement. Defendant does not accede thereto, and will at the hearing of this cause meet such contention fully. Notice is given complainant that if the witness is examined further on the subject

(Deposition of W. W. Wilson.)

of the O'Donnell and Willard patent, defendant will insist that it is a waiver of the pretended objection that the subject of the O'Donnell and Willard patent is not cross-examination, and, clearly, if it is not cross-examination it cannot be the subject of redirect examination. The difference between the subject of question 153 asked this witness on redirect examination and on cross-examination of this witness in regard to the subject matter of the O'Donnell & Willard patent will become apparent at the hearing of this cause. Defendant disclaims making this witness a witness on behalf of defendant for any purpose whatsoever. The questions asked this witness in regard to the O'Donnell & Willard patent are competent cross-examination for the purpose of testing the ability of this witness as an alleged expert, if for no other purpose.

Mr. BLAKESLEE.—There is a time, of course, and a place, for presenting defenses in suits of this sort, and under the guise of testing the expertness of this witness it is contended that the defendant cannot make his case on his defenses out of [269] the mouth of the witness for the complainant. We understand counsel to imply that we cannot examine this witness either in redirect or in cross-examination as to the subject of this O'Donnell and Willard patent. We cannot adopt this view of the situation, and we propose to examine him in the most advantageous method and leave it to the Court to determine the whole question of the propriety of examining this

(Deposition of W. W. Wilson.)

witness at all at this time and in these proceedings, upon the subject of this O'Donnell and Willard patent. We do not proceed in this direction solely because of the objection made by counsel to question 153, but in order that we may exercise our undoubted rights to cross-examine any witness in connection with whose testimony matters purely of defense are brought into the case. If the Court rules that all of this testimony on the O'Donnell and Willard patent taken at this time in connection with these *prima facie* proceedings should be ruled out and withheld from consideration, such ruling will not be contrary to our expectations. However, if any of it is to be considered, we wish this matter to be presented in a manner which is commensurate with our rights on this subject.

Mr. LYON.—Defendant insists that complainant has no right to “cross-examine” this witness.

Q. 154. (By Mr. BLAKESLEE.) Do you find any dovetails or lateral projections upon the shanks of the cutters of the O'Donnell and Willard patent?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 155. (By Mr. BLAKESLEE.) Do you take it that any rotation of the cutters of the O'Donnell and Willard patent is possible when the shanks thereof are pocketed in the spaces between the partition 3 and the bowl 2?

Mr. LYON.—Objected to as leading.

A. No, sir. [270]

Q. 156. (By Mr. BLAKESLEE.) Do you find

(Deposition of W. W. Wilson.)

more than one shoulder or enlargement upon the cutters of the O'Donnell and Willard patent reamer?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 157. (By Mr. BLAKESLEE.) Do you find disclosed in the O'Donnell and Willard patent any object or purpose for this one shoulder, other than to impart an up-thrust of the cutters to the bowl and to cooperate with the shoulder upon the lower end of the casing in causing the collapsion of the cutters?

Mr. LYON.—Objected to as leading and suggestive.

A. No, sir.

Q. 158. (By Mr. BLAKESLEE.) Do you find on the cutters of the O'Donnell and Willard patent reamer any lateral extensions or shoulders which are developed clear to the bottoms or cutting edges of the cutters so that the cutting edges are widened substantially to the extent that the upper portions of the body of the cutters are widened.

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 159. (By Mr. BLAKESLEE.) As a matter of fact, in the O'Donnell and Willard cutters there is nothing but a slight enlargement of the body of the cutter at each side, diminishing toward and disappearing at the cutting edge of the cutter? Is that not correct?

Mr. LYON.—Objected to as leading and suggestive.

A. Yes, sir.

(Deposition of W. W. Wilson.)

Q. 160. (By Mr. BLAKESLEE.) And taking into account the mass of the rest of the cutters and the stresses and strains which tend to cause rotation of the reamer-cutters, do you consider that these slight diminishing side enlargements are or would be materially effective in opposing any rotation of the cutters or any [271] tendency of the same to rotate, should such rotation be possible?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 161. (By Mr. BLAKESLEE.) Do you find at or adjacent to the cutting edges of the cutters of the O'Donnell and Willard patent reamer any material increase in mass of metal which might serve to materially prolong the life of the cutters by providing extra metal for dressing out the cutters adjacent to the cutting edges?

Mr. LYON.—Objected to as leading, and upon the further ground that it is irrelevant and immaterial to the issues of this suit, inasmuch as the issues of this suit are directed solely to the underreamer-cutter as an article of manufacture, and do not embrace and involve the mode of operation of an underreamer as a whole, and, therefore, the mode of operation or principle of action of an underreamer-cutter when allied with the other parts of the underreamer can form no part of the issues of this case; and the testimony of this witness shows plainly that the theory of rotation of the cutter advanced by this witness has to do with the co-operation of the cutter of the underreamer with the parts and surfaces of the body there-

(Deposition of W. W. Wilson.)

of to which it is allied, and that such rotation is incidental to the co-operative action of the cutter in and with such underreamer body and surfaces, and not inherent in the article of manufacture, to wit, the cutter itself *per se*, and that such rotation is not in the cutter itself, nor is there any action of the cutter itself causing rotation of any of its parts, and that such rotation cannot take place except in conjunction with other parts in forming any part of either Claim 16 or 17 of the patent in suit or involved in this litigation.

Mr. BLAKESLEE.—Although we do not, as by this time will be manifest, agree with the views of counsel with respect to this objection discussed at length by him, we may point out that from [272] the viewpoint of his remarks it must be proper to consider the advantages attaching to an underreamer-cutter having special or particular features as one of the objects of invention is to better meet the service and uses to which a patented thing is to be put. If, for instance, it be established that rotation of cutters is an objectionable and prevalent trouble in underreaming, it certainly would be proper to point out that a patented underreamer-cutter which in use would eliminate such rotative trouble, was better and an improvement over prior cutters in that respect. The discussion of a patented improvement certainly cannot be limited to its inherent aspects and qualities, but must also in a fair and proper discussion of an invention go into the advantages of such inherent qualities and characteristics. Furthermore, it is to be pointed out that the last question related to the

(Deposition of W. W. Wilson.)

cutting edge of the cutter, and it is assumed that it is proper to discuss the work for which the cutter is designed.

Mr. LYON.—The further objection is urged to this entire line of examination and to all portions of the testimony of this witness, or any other witness in this case, with reference to the mode of operation or principle of action of an underreamer-cutter when in position as a part of an underreamer, that the complainant herein is estopped from claiming that Claims 16 and 17 embrace or can be limited to or held to embrace any other portion of the underreamer than the underreamer-cutter *per se* as an article of manufacture, for the reason that on March 16, 1906, by the office action of rejection as shown by paper No. 4, forming part of complainant's exhibit "Wilson File Wrapper and Contents," the original claims 16 and 17 were rejected on the patent to Edward Double, No. 748,054, upon the grounds stated by the commissioner of patents, as follows: "Furthermore, the article of manufacture cannot be limited by the device with which it is used." Complainant acceded to such rejection and position taken by the patent office, and [273] amended the said claims to avoid the objection and rejection just quoted, and he is therefore estopped from making a contention in opposition to the position thus taken by the complainant in the patent office, or claiming that claims 16 or 17 are commensurate with or cover the underreamer in connection with the said article

(Deposition of W. W. Wilson.)

or manufacture, to wit, underreamer-cutter or cutters.

Mr. BLAKESLEE.—Although this record shows that the questions or subjects of mode of operation and principle of action have been industriously followed in the examination of witnesses by counsel for the defendant, in fact under our repeated objections, we are nevertheless obliged to counsel for pointing out at this time the quoted matter of paper No. 4 of the "File Wrapper and Contents," being complainant's Exhibit "Wilson File Wrapper and Contents." Such quoted matter very nicely, we submit, supports our contention that "the article of manufacture cannot be limited by the device with which it is used." We are attempting to prove that these cutters were not limited to those features of underreamer construction which are disclosed in complainant's exhibit "Wilson Patent," but have been shown to be susceptible of adaption to the specific features of construction of defendant's underreamer. In fact, it is our position exactly that this underreamer-cutter with its various features of improvement is adaptable to the varying conditions of service and to combination with various other general features of underreamer construction, and that is what we are attempting to prove in this case. In order to so prove our contentions, it is necessary for us to show what this improved underreamer-cutter is capable of doing, what its features of advantages are and how versatile it is under any conditions of service within which its great advantages

(Deposition of W. W. Wilson.)

are susceptible of demonstration. Therefore, while not limiting the improved cutters to any specific underreamer organization, we are simply attempting [274] to show how such cutters co-operate with the remaining portions of complainant's and defendant's underreamer organizations.

A. No, sir.

Q. 162 (By Mr. BLAKESLEE.) Do you take it that this single ledge or rib or shoulder upon the cutters of the O'Donnell and Willard patent underreamer in any way answers the purpose which you have discussed of the two lateral shoulders upon the bodies of the cutters of complainant's exhibit "Wilson Patent" and complainant's exhibit "Improved Double Reamer and Cutters" cutters?

Mr. LYON.—Objected to as leading and incompetent, and not the best evidence, and calling for a mere conclusion of the witness and not for a statement of facts.

A. No, sir.

Q. 163. (By Mr. BLAKESLEE.) Now, as to the question of in-trust tilting of these cutters of the O'Donnell and Willard patent reamer, do you think that the terminal portions of *the* this single ledge or rib or shoulder upon this reamer materially assists the cutters in imparting in-trust to the hollow-slotted extension or partition disposed between the cutters?

Mr. LYON.—The same objection.

A. No, sir.

Q. 164. (By Mr. BLAKESLEE.) In an under-

(Deposition of W. W. Wilson.)

reamer having cutters designed like those of the O'Donnell and Willard patent, namely, with shanks of increasing width calculating from the upper ends of the shanks downwardly, such shanks being closely pocketed in the spaces between the bowl 2 and the partition 3 when the cutters are in expanded position, is there any necessity for any enlargement of the bodies of the cutters laterally to oppose any rotatory tendency of the cutters?

Mr. LYON.—Objected to as leading and as irrelevant and immaterial to the issues of this suit, for the reasons before stated in full. [275]

A. No, sir.

Q. 165. (By Mr. BLAKESLEE.) When you testified in answer to question 116 on page 118 of the record, that the lower ends of the bits are extended out or projected out at right angles to the shank of the bit or cutter, forming the shoulder, you intended to convey the idea that such slight extensions were merely the terminal portions or ends of the single shoulder developed in the curve of the outer face of the bits or cutters, did you not?

Mr. LYON.—Objected to as leading and suggestive.

A. Yes, sir.

Q. 166. (By Mr. BLAKESLEE.) Would it be possible to insert a cutter constructed such as the disclosure in the O'Donnell and Willard patent in a reamer constructed substantially in accordance with the specifications and drawings of Complainant's Exhibit "Wilson Patent," or in the reamer body,

(Deposition of W. W. Wilson.)

being Complainant' Exhibit "Improved Double Reamer and Cutters," so that such O'Donnell and Willard patent cutter would be operative and expand and contract properly, assuming that the sides of such cutter were prepared to permit of its introduction in the new environment with the closest or most perfect working fit which could be provided?

Mr. LYON.—Objected to as leading, and irrelevant and immaterial to the issues of this suit, and as incompetent, the witness not having qualified to answer the question.

A. No, sir.

Q. 167. (By Mr. BLAKESLEE.) Would the addition of dovetails or ledges upon the shank of such O'Donnell and Willard patent reamer bit or cutter, without the provision of the two distinctly produced and provided lateral shoulders, upon the body of such cutter, and extending clear down to and including part of the cutting edge of the cutter—would such O'Donnell and Willard patent reamer-cutter serve the purposes and have the [276] advantages and attributes of a cutter such as that disclosed in Complainant's Exhibit "Wilson Patent"?

Mr. LYON.—Objected to as leading and calling for a mere conclusion, and an expression of opinion of the witness and not for a statement of facts, and therefore incompetent. Further, on the ground that it is indefinite and uncertain as to what alleged advantages and attributes are referred to.

A. No, sir.

Q. 168. (By Mr. BLAKESLEE.) You have

(Deposition of W. W. Wilson.)

been engaged in the manufacture or assisted in the manufacture of underreamers and cutters thereof for some years, have you not? A. Yes, sir.

Q. 169. And in giving your last answer have you taken into consideration all such experience and all of the lessons and teachings which have resulted from such experience in underreamer and underreamer-cutter manufacture?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 170. (By Mr. BLAKESLEE.) And the provision of this single up-thrust imparting a collapse-assisting shoulder upon the cutter of the O'Donnell and Willard patent underreamer in no wise increases the width of the cutting edge of the cutter, does it?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 172. (By Mr. BLAKESLEE.) From your observation in the market and in the field of the reamers produced and sold by the defendant Union Tool Company, have you ever seen a defendant's underreamer provided with a cutter or cutters constructed and organized in accordance with the disclosure of the cutter in the O'Donnell and Willard patent, irrespective of any other features of the underreamer?

Mr. LYON.—Objected to as leading and calling for a [277] mere conclusion and statement of opinion of the witness, and not for a fact, and incompetent and not the best evidence.

A. No, sir.

(Deposition of W. W. Wilson.)

Q. 173. (By Mr. BLAKESLEE.) Now, referring to Complainant's Exhibit "Old Style Double Reamer-cutter No. 1," what do you find to be the surface formation of the inner face of the body of the cutter at the expansion portion thereof?

A. The rectangular plane surface.

Q. 174. Please apply to this surface some straight-edge or flat surface and state whether this surface of the cutter is true?

A. No, sir; the same is rounded near its lower edge, probably by the dressing operations and wear, and the remainder of it above this point is rounded slightly along a vertical axis.

Q. 175. In which direction is the rounding found to extend?

A. The axis of the rounding is parallel to the axis of the cutter.

Q. 176. In other words, the curve of the rounding extends transversely of the surface?

A. Yes, sir.

Q. 177. Referring to a cutter of Complainant's Exhibit "Improved Double Reamer and Cutters," please apply a straight-edge to the thrust-bearing surface on the body of this cutter, and tell us what comparison you find in the respects last mentioned between such surface and the surface of the old style cutter.

A. The surfaces are very nearly straight. They have been slightly warped at the lower edges, due to dressing.

Q. 178. From your knowledge of underreamers

(Deposition of W. W. Wilson.)

in manufacture and use, and your observation of Double underreamers in the field, have you any explanation to offer as to this difference. [278] in the surface confirmation between the thrust-bearings of these two reamers?

A. This rounding in the old style Double underreamer-cutter No. 1 is due to the wearing of the thrust-bearings, caused by rotating action of the cutters. This action has been resisted effectively in the Complainant's Exhibit "Improved Double Reamer and Cutters," cutter by the lateral extension of the thrust-bearing, and is therefore absent.

Q. 179. Have you had occasion to examine other old style and improved Double underreamer-cutters in the field after the same have been used in the same manner as you have compared these particular cutters before us?

A. Yes, sir; I have examined them often, or many times.

Q. 180. How have you found the conditions on examination to compare with the conditions which you have found just now? A. Identical.

Q. 181. Referring to Complainant's Exhibit "Wilson File Wrapper and Contents" and to the photographic print of the drawing therein, marked "Exhibit A," and stamped with the date "Feb. 28, 1914," and referring to the edge view of a cutter adjacent to the lower right-hand portion of that drawing, and likewise to the inner-face view of a cutter at the bottom of that drawing, have you anything to say as to the showings of these views in comparison

(Deposition of W. W. Wilson.)

or as to the formation of the bodies of the cutters shown therein? That is, from your understanding of this drawing?

Mr. LYON.—Objected to as incompetent and not the best evidence, and not calling for a statement of facts.

A. In the view of the edge view of a cutter noted thereon “side” in reference to the extension of the metal forming the dovetail shank, and the main portion of the shank between the dovetails outward, the line of extension is seen to be continuous between the thrust-bearing surfaces on the shoulders of the cutter bearing surfaces on the shoulders of the cutter [279] body. It will be noted that this line is continuous above and below, and is carried out back of the extension of the thrust-bearing surface by two dots, so that in the machining operation this entire face could be machined with one setting. Thus the thrust-bearing faces are independent and distinct from any plane surface on the back of the cutter body.

Q. 182. (By Mr. BLAKESLEE.) Comparing these two views with figures 8 and 9 of Complainant’s Exhibit “Wilson Patent,” please state whether or not any essential differences in the use of the cutters of the print are developed, comparing the same with the cutters of the drawing of the patent. A. No, sir.

Q. 183. Now, referring to Complainant’s Exhibit “Old Style Double Underreamer-Cutter No. 1,” do you find on the same any lateral shoulder or shoulders corresponding to those on a cutter of Complain-

(Deposition of W. W. Wilson.)

ant's Exhibit "Improved Double Underreamer and Cutters" cutter? A. None.

Mr. Lyon.—Objected to as leading.

A. No, sir.

Q. 184. (By Mr. BLAKESLEE.) Do you find any portion of the thrust-bearing bearing upon the old style Double reamer-cutter which projects beyond the supplementary dovetails or ledges upon the shank of the cutter?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 185. (By Mr. BLAKESLEE.) Do you find in this cutter any material increase of the dimensions of the body of the cutter below the thrust-bearing portion over the transverse dimensions of the thrust-bearing portion?

Mr. LYON.—Objected to as leading.

A. No, sir. [280]

Q. 186. (By Mr. BLAKESLEE.) Then, am I correct as understanding, as a summary of this testimony, that you do not find upon this old style Double cutter any lateral extensions or shoulders similar to those of Complainant's Exhibit "Wilson Patent" or Complainant's Exhibit "Improved Double Reamer and Cutters" cutter?

Mr. LYON.—Objected to as leading, calling for a conclusion of the witness and not for a statement of fact, and not the best evidence.

A. No, sir.

Q. 187. (By Mr. BLAKESLEE.) Now, referring to this old style Double Reamer Cutter No. 1,

(Deposition of W. W. Wilson.)

how do you account for the slight increase of its body below the thrust-bearing portion?

Mr. LYON.—Objected to as incompetent, the witness not having qualified to answer the question; that it is calling for a mere expression of opinion of the witness and not for a statement of facts, and that it appears from the testimony of this witness that he knows nothing whatever of the antecedents of this particular cutter exhibited, nor did he ever see the same as it was manufactured by the defendant company, if it was ever manufactured by the defendant company, and on the further ground that it is irrelevant and immaterial in any view of the case, as it is admitted on behalf of complainant in this suit that such cutter itself was made and was used in the form here shown prior to the alleged invention by complainant of the underreamer-cutter shown or described in the patent in suit.

A. I believe this enlargement to be due to the upsetting of the metal at these points by the operation of dressing the cutters, which is done for the purpose of keeping the cutting edge out to the proper diameter to which it is desired to ream the hole, and which must be done from time to time as the cutting edge wears. [281]

Mr. LYON.—We move to strike the answer from the record and exclude it from consideration on the grounds stated in the objection.

Q. 188. (By Mr. BLAKESLEE.) Have you seen old style Double underreamer-cutters in which the body beneath the thrust-bearing was substan-

(Deposition of W. W. Wilson.)

tially the same width as the thrust-bearing

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 189. (By Mr. BLAKESLEE.) Do you consider that the slight extensions of the thrust-bearing of this cutter due to the provision of the auxiliary dovetails or ledges on the shanks are or are not material with respect to opposing any rotatory tendency of the cutter or imparting in-thrust from the cutter to the body of the reamer?

Mr. LYON.—Objected to on each of the grounds stated in the objections to the preceding question, and particularly upon the ground that it is leading and incompetent and calling for a mere conclusion and not for a statement of facts.

A. They are not material.

Q. 190. (By Mr. BLAKESLEE.) Now, in Complainant's Exhibit "Improved Double Reamer and Cutters," what parts of the thrust-bearings of the cutters rock upon the hollow-slotted extension of the body of the reamer?

Mr. LYON.—Objected to as irrelevant and immaterial to the issues of this case.

Mr. BLAKESLEE.—The question is withdrawn.

Q. 191. Now, in Complainant's Exhibit "Improved Double Underreamer and Cutters," upon what part or parts of the hollow-slotted extension do the lateral extensions or shoulders of the cutters rock?

Mr. LYON.—The same objection. [282]

A. On that part of the parallel bearing faces of

(Deposition of W. W. Wilson.)

hollow-slotted extension lying below and outside of the planes formed by the backs of the dovetailed grooves of the body.

Q. 192. (By Mr. BLAKESLEE.) Do you find in Complainant's Exhibit "Old Style Double Underreamer Body" any parts on the body corresponding to these parts just pointed out?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 193. (By Mr. BLAKESLEE.) And to the extent that the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" rock on the portions defined of the body at the lateral extensions, am I correct in understanding your previous testimony that these lateral extensions participate in the expanding actions of the cutter?

Mr. LYON.—Objected to as leading and incompetent, and not the proper method of proof, and the record speaks for itself what the testimony of the witness is, and the understanding which counsel may have or may not have from such testimony is immaterial. The witness should state facts. It is incompetent and improper for complainant's counsel to state his understanding of a matter and ask the witness simply to nod his head.

Mr. BLAKESLEE.—We are not aware that the witness has been giving audible noddings, but there is such an extensive objection to the question that we will restate it and depart from our attempt to prevent what we consider an unnecessary elaboration of the record.

(Deposition of W. W. Wilson.)

Q. 194. (By Mr. BLAKESLEE.) Will you please state what if any relation this rocking of the lateral extensions of the cutters of Complainant's Exhibit "Double Reamer and Cutters" upon the co-operating extensions of the hollow-slotted extension has or bears to the expanding action of the cutters?
[283]

Mr. LYON.—Objected to as irrelevant and immaterial to the issues of this suit, and needlessly incumbering the record.

A. It has no relation to the expanding action of the cutters.

Q. 195. (By Mr. BLAKESLEE.) During this rocking action of the cutters does any part of the expansion take place?

Mr. LYON.—The same objection as last noted.

A. If the cutter is moving up or down with relation to the reamer body, there is a contraction or expansion taking place, due to the upwardly and inwardly declined dovetailed ways drawing the upper ends of the cutters together.

Q. 196. (By Mr. BLAKESLEE.) Then during such action what, if any, relation exists between the expansion or contraction of the cutters and the rocking of these lateral extensions of the cutters upon the lateral extensions of the hollow-slotted extension?

A. During that movement of the cutter the cutter is pivoted at or near this point.

Q. 197. Is that a pivotal point or fulcrum point, or part of an extended fulcrum point or fulcrum area?

(Deposition of W. W. Wilson.)

Mr. LYON.—Objected to as leading and suggestive, irrelevant and immaterial.

A. It is part of an extended fulcrum point.

Q. 198. (By Mr. BLAKESLEE.) Please state the location of this fulcrum area upon the cutter.

A. It is a horizontal line of contact of the spreading-bearing surface of the cutter where it contacts with the hollow-slotted extension of the body.

Q. 199. Now, referring to what you have previously referred to as the tops of the lateral extensions of the cutters of this exhibit, please state whether or not these tops, that is, at [284] the lines of intersection of the bearing-faces and the inclined surface leading downwardly and rearwardly therefrom, in any way co-operate with the spreading-bearings upon the body in the expanding or contracting of the cutters.

Mr. LYON.—Objected to as leading. On the further ground that it is irrelevant and immaterial to the issues of this suit.

A. There is an instant in the expansion and contraction action of the cutters, while the bearing-face is traveling in contact with the sides of the hollow-slotted extension, when the line of contact of the lower corner of the parallel bearing-face coincides with the line of the upper edges of the lateral extensions of the shoulders on the cutter. At this instant this edge becomes a fulcrum point about which the cutter is expanding.

Q. 200. (By Mr. BLAKESLEE.) Is there, or is there not, any wedge action in contradistinction

(Deposition of W. W. Wilson.)

from physical action at those top lines?

Mr. LYON.—Objected to as leading, and upon the grounds stated in the preceding objection.

A. No, sir.

Mr. BLAKESLEE.—Counsel may recross.

Mr. LYON.—With the same reservation stated upon the record prior to the commencement of the cross-examination of this witness, and subject to such reservation and to the motion to strike the testimony of this witness from the record and exclude it from consideration on the ground that it is taken out of order, and to follow and abide by such ruling, I will further examine the witness.

Recross-examination.

(By Mr. LYON.)

Q. 201. Mr. Wilson, you have referred to a small groove or cut in the thrust-bearing of the so-called “improved style” Double cutters, forming a part of Complainant’s Exhibit “Improved [285] Double Reamer and Cutters.” What function, either as a part of the cutter or in the expansion or collapsion of the cutters of the so-called “improved Double reamer,” or in reaming, or in any other action, does the same perform?

Mr. BLAKESLEE.—Objected to as not recross examination.

A. This notch permits access of a threaded bolt to the spring-actuated rod or mandrel for the purpose of drawing the cutters down and of relieving the strain on the key, so that it may be withdrawn. Also, it serves to remove the metal at the center of the

(Deposition of W. W. Wilson.)

thrust-bearing which in case rocking occurred would tend to pile up and form a fulcrum point on which the cutter could rock.

Q. 202. (By Mr. LYON.) Then do you understand that in the so-called Double improved reamer such a groove is necessary in the thrust-bearing of the cutter to enable such underreamer to expand and contract the bits in accordance with their normal mode and principles of operation?

A. Yes, sir.

Q. 203. The said thrust-bearing extends above the upper end of this groove in the solid surface across the width of such bearing and out to even with the commencement of what you have termed the right-angles shoulders formed below the upper end of this groove? Is that correct?

Mr. BLAKESLEE.—Objected to as calling for testimony directed purely to the showing of the exhibit and not a comparison with anything else, or contrary to anything else, and therefore not calling for the best evidence, which is the exhibit. The necessity of defining in this case is not seen.

A. In the cutters shown in the exhibit there is a slight extension of this groove to the top of the inner thrust-bearing.

Q. 204. (By Mr. LYON.) Place your hand upon that portion of both the cutters to which you have last referred and state [286] whether or not both of them have not been hollowed out by being hammered, and is said hollow at that point is not of greater area

(Deposition of W. W. Wilson.)

or extent laterally than the cross-sectional area of the groove?

Mr. BLAKESLEE.—The same objection, that it is calling for a conclusion and is not recross-examination.

A. I am unable to state how this is caused.

Q. 205. (By Mr. LYON.) The depression to which I have just directed your attention exists, does it, in both of said cutters?

Mr. BLAKESLEE.—The same objection.

A. I believe so; yes, sir.

Q. 206. (By Mr. LYON.) Do you know of your own knowledge by whom these two cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" were made, or by whom they were last dressed?

Mr. BLAKESLEE.—Objected to as not cross-examination.

A. No, sir.

Q. 207. (By Mr. LYON.) I believe you stated in this case that you were a witness on behalf of the defendant Wilson & Willard Manufacturing Company in suit in equity in the Circuit Court, No. 1540, pending in this court, wherein the Union Tool Company are complainants and the Wilson & Willard Manufacturing Company are defendants, for infringement of the Double patent No. 734,833, dated July 28, 1903. In your deposition in that case and on December 2, 1912, you were asked the following questions and gave the following answers: "Q. 53. Have you examined 'Defendant's Exhibit O'Donnell & Willard

(Deposition of W. W. Wilson.)

Reamer'? A. I have. Q. 54. Will you please compare and contract the same with 'Complainant's Exhibit Double Patent' and the disclosure thereof?

A. In each there is a body with means for connecting to a string of tools at the top. The body is hollowed out along its axis for [287] admission of spring and cutter retaining rings, access to which is had in the Double patent by a joint in the body, and in the O'Donnell & Willard underreamer the lower partition furnished at its upper end with a plug threaded into the body at that point, thus allowing admission to the spring chamber. The lower end of the mandrel rod in the Double reamer has a movable key, while in the O'Donnell & Willard it consists of a solid T-head on the rod. The ends of this T bear against the upper portions of slots in the cutter-shank, as does the key in the Double reamer. The cutters on being withdrawn in the O'Donnell & Willard reamer close together over the lower portion of the removable partition. In the Double reamer they close together over a stationary partition between the cutters. This partition in both cases has a hole for movement of the cutter supporting rod, and in both cases is furnished with a suitable slot, which is long enough to permit travel of the key or T to give suitable movement for the cutting. The cutters in the O'Donnell-Willard reamer have shanks which fit into pockets formed in the end of the body. The outer faces of these pockets are tapered inwardly at their upper ends, causing the cutters at their upper ends to be drawn together as the reamer is expanded. In the Double underreamer, a

(Deposition of W. W. Wilson.)

similar action is accomplished by the dovetailed ways, which dovetail ways are tapered together at their upper ends. The collapsing of the cutters in both cases is caused by the cutters dropping down over the end of the partition, and also by the outward tilting of the upward end of the cutters, caused in the one case by the tapered pockets and in the other by the tapered dovetail ways. The bearing of the cutters at their upper ends is taken by suitable shoulders on the body in both cases. In the Willard-O'Donnell reamer, additional bearing-faces are furnished by the shoulder at the upper part of the cutter body, bearing [288] against the lower outer edge of the cutter pocket. The methods of operation are the same." I have correctly quoted said questions and answers from said depositions?

A. Yes, sir.

Q. 208. And in said suit on December 6, 1912, you were recalled to the stand and asked the following questions and gave the following answers: "Q. 343. I now show you 'Defendant's Exhibit O'Donnell and Willard Patent' and ask you if you are familiar with the disclosure thereof? A. Yes. Q. 344. Will you please briefly summarize the disclosure of this patent? Mr. LYON.—Objected to on the same ground as stated in the objection to the patent, to wit, that the patent on its face shows that it was not a publication nor was it granted or issued or patented until years after the date of the application by Edward Double for the patent sued on herein. Mr. BLAKESLEE.—And again we would state that

(Deposition of W. W. Wilson.)

the defense which will be urged pertinent to this patent is that the application therefor was co-pending with the application for the 'Complainants' Exhibit Double Patent' and was of an earlier date of filing in the patent office. Mr. LYON.—This defense being subject to our objections heretofore entered of record, subject to the possibility of an amendment of the answer or other disposition. A. This patent covers an underreamer consisting of a solid body having means of attachment to suitable tools at the top, and having a tapering hole bored centrally in the lower end of the body for a distance, above which there is a straight hole for the reception of a spring and T-rod. In the upper end of the tapered hole there is a threaded portion into which a wedge-shaped piece shown at 3 in the drawing, which wedge-shaped piece is provided at its top with a threaded portion and may be made to engage with the threaded portions of the body. The wedge-shaped portion 3 has drilled through its upper portion a hole 6 for the passage of the mandrel rod, and below this hole is a slot 4 to allow movement of [289] the laterally extending lugs of the lower end of the T-rod, said slot being long enough to allow sufficient play to the T-rod to give proper action to the cutters. On the lugs of the T-rod, fastened thereto by slots threading over these lugs, are two cutters 12 and 12'. These cutters have shanks which are arranged to fill the cavity on each side of the wedge portion 4 when the cutters are in expanded position. Below these shanks of the cutters are bodies terminating at their lower ends in outwardly projecting

(Deposition of W. W. Wilson.)

cutting faces. The upper portion of the mandrel rod has around it a spring, which spring bears on its lower end on the threaded plug, on the upward end of the partition 4, and the spring at its upper end bearing against threaded nuts which are screwed on the threaded portions of the top end of the mandrel rod. This spring being in compression, tends to draw the cutters to expanded position. The collapsing of the cutters is caused by their sliding downward over the wedge-shaped piece 3 which allows the lower ends of the cutters to come together. Also, the upper ends of the cutters ride outwardly, bearing against the outer walls of the tapered pockets, allowing them to tilt outwardly, causing the further contraction of the cutters, due to the tilting over the fulcrum, over contraction of the cutters, due to the tilting over the lower end of the wedge-partition 3. To maintain the wedge-shaped portion 3 in position when the tool is being used, there are plugs 28 which pass through holes in the side of the body and are threaded into the wedge-shaped portion 3, preventing it from unscrewing out of the body. The reamer is also provided with a locking device for locking the cutters into reaming position when below the casing. This locking device consists of a plug 21 which slides sideways in the hold in the wedge-shaped portion 3 and extends outward through the body through suitable holes. This plug has behind it another plug which has a tapered face 17, which may pass underneath the lower end of the T-rod. Behind this plug 16 there is a spring which [290] bears against it,

(Deposition of W. W. Wilson.)

at one end, and on the other end bears against a threaded button 19, to hold it in place. When the reamer is run in the casing the plug 21 is pressed inwardly, causing plug 16 to be thrown back in such position that the beveled face of 23 on the mandrel rod engages the bevel face 17 on the inner plug 16, so that the mandrel rod may be drawn down by means of the cutters, forcing the plug 16 back, compressing the spring 20, allowing the cutters to be withdrawn and collapsed. When the reamer is run in the hole the sides of the bodies of the cutters bearing against the casing hold them in collapsed position until the cutter passes the shoe, when this pressure is released, allowing the spring to draw the cutters up into the working position. This movement of the mandrel rod upward, frees plug 16, allowing it to press against the plug 21. When the reamer is further lowered allowing the plug 21 to move past the shoe, it is forced outward against the shoulder 25 allowing the plug 16 to move still further in, so that there is a plane surface bearing against the bottom of the mandrel rod holding it in that position. Thus the cutters are locked and cannot be withdrawn or displaced when beyond the casing. When the reamer is withdrawn from the casing the plug 21 first strikes the shoe, causing it to move inwardly, which causes, the plug 16 to move to such position that the shoulder 17 may be engaged by the mandrel rod. On further withdrawing the reamer from the casing the casing shoe strikes the shoulders on the cutters causing them to be drawn downward, the tapered shoulder

(Deposition of W. W. Wilson.)

23 on the lower end of the mandrel rod striking the beveled face 17 on the plug 16 and causes it to be thrown further over against the compression of the spring, allowing the cutters to be drawn downward into collapsed position when the reamer may be withdrawn from the casing. Q. 345. Can you produce upon a small scale a mechanical embodiment of any features disclosed in 'Defendant's Exhibit, O'Donnell and Willard Patent'? [291] A. I can. Q. 346. Please do so. (Witness produces a small brass model.) Q. 347. Will you please compare this model with the 'Defendant's Exhibit O'Donnell and Willard Patent'? A. The model is a disclosure of the O'Donnell and Willard Patent with the exception that the pins 28 for retaining the wedge-shaped partition in place are not shown in the brass model. Also, the locking means consisting of plug 19, spring 20, plug 16 and plug 21, shown in the patent drawing, are not present in the brass model. Q. 348. Please state where you got this brass model. A. This model was made at the Wilson & Willard Manufacturing Company in compliance with the disclosure of the patent about the time that I was first employed at the Wilson & Willard Manufacturing Company. Q. 349. Please state what you know personally as to its manufacture. A. I handled the orders on the books at the time it was made at the Wilson and Willard Manufacturing Company and saw it in construction at that time. Mr. BLAKESLEE.—The small brass model just discussed is offered in evidence as 'Defendant's Exhibit Partial

(Deposition of W. W. Wilson.)

O'Donnell and Willard Underreamer on Diminutive Scale.' Mr. LYON.—Objected to as incompetent and as fragmentary and as not embodying either the construction or mode of operation of the disclosure of the O'Donnell and Willard Patent, and as misleading. Q. 350. (By Mr. BLAKESLEE.) Have you examined 'Defendant's Exhibit O'Donnell and Willard Underreamer'? A. I have. Q. 351. Please compare the same with the disclosure of 'Defendant's Exhibit O'Donnell and Willard Patent.' A. The 'Defendant's Exhibit O'Donnell and Willard Underreamer' differs from the disclosures of the O'Donnell and Willard Underreamer Patent in that there are no locking means as shown by plug 19, spring 20, plugs 16 and 25, present in the O'Donnell and Willard Underreamer. The O'Donnell and Willard underreamer exhibited also differs from the patent in that there is placed on the upper portion of the body a ring, which ring has in its upper portion a key which passes [292] through a slot in the body over the top of the T-rod and at 90 degrees around the circumference of this ring there are casing engaging means which extend outward to a greater diameter than the inside of the casing when the reamer is in expanded position. In the body underneath these casing engaging means are suitable slots so arranged that when the engaging means are drawn downward sufficient to compress the springs they may move inward to a contracted position in the reamer body, their outside diameter then being equal to or less than the inside of the

(Deposition of W. W. Wilson.)

casing. This device is used for the purpose of holding the spring in compressed position, and, therefore, reduces its upward pressure on the cutters when the reamer is being run into or out of the casing.

Q. 352. Please state more fully, according to your understanding, what the ring on top is for that you refer to. A. As I have stated, that is for the purpose of holding the cutters in contracted position, or, at least, taking off the main strain of the spring from the cutters when running in and out of the casing, particularly down the casing.

Q. 353. Please now compare 'Defendant's Exhibit O'Donnell and Willard Reamer' with 'Defendant's Exhibit Partial O'Donnell and Willard Reamer on Diminutive Scale.' A. The only difference between 'Defendant's Exhibit O'Donnell and Willard Underreamer' and 'Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale' is the size of the two reamers. Also the pin for holding the wedge to prevent its unscrewing when in use, are not present in the brass model on a diminutive scale, but they are present in 'Defendant's Exhibit O'Donnell and Willard Underreamer.' Also the ring device with key and lugs shown in 'Defendant's Exhibit O'Donnell and Willard Underreamer' are not present in 'Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale.' Q. 354. Now please state how the absence from 'Defendant's Exhibit O'Donnell and [293] Willard Reamer, and 'Defendant's Exhibit Partial O'Donnell and Willard Reamer on Diminutive Scale' of the features dis-

(Deposition of W. W. Wilson.)

closed in 'Defendant's Exhibit O'Donnell and Willard Patent,' as to which you have testified, affect, if such features do, by their absence, the operation of these two mechanical exhibits. A. The only features absent are the means for locking the cutters in expanded position when below the casing, consisting of plug 19, spring 20, plug 16 and plug 25. This locking device was for the purpose of holding the cutters in case such formations should be encountered which would cause the cutters on the reamer to be withdrawn on the up-stroke of the tools when working. Such conditions, however, do not exist except seldom, and the locking means could be dispensed with without affecting the operation of the tool except in very sticky formations. Q. 355. Please state whether in encountering such unusual or sticky formations in the operation of the reamer disclosed in 'Complainants' Exhibit Double Patent' and of the reamers disclosed in 'Complainants' Exhibit Double Patent' and 'Complainants' Exhibit Wilson Patent' and 'Defendant's Exhibit Double Patent' would or would not tend to cause the same action of the cutters, namely, a pulling-down action. Mr. LYON.—Objected to as leading. A. Yes, sir. Q. 356. By Mr. BLAKESLEE.—Please compare the operation of the reamer disclosed in 'Complainants' Double Patent' with the operation of the reamer disclosed in 'Defendant's Exhibit O'Donnell and Willard Patent,' eliminating from consideration the features of 'Defendant's Exhibit O'Donnell and Willard Patent' which are lacking in 'Defendant's

(Deposition of W. W. Wilson.)

Exhibit O'Donnell and Willard Reamer,' upon encountering sticky formation or other unusual formations, such as you have referred to? A. In each reamer there is a body with means for attachment to the tools at the upper end, each having a central bore for the placement of spring and mandrel rod, such spring on the upper end bearing against the end threaded on [294] the upper end of the mandrel rod, and on its lower end in the Double underreamer disclosed against a shoulder in the underreamer body, and in the O'Donnell and Willard underreamer against a shoulder on the upper end of the threaded plug on the top of the central partition. The mandrel rod in the Double underreamer at its lower end has a slot for the reception of a key, which key extends downward through a slot in the body into contact with the upper edges of the slots in the shanks of the cutters. In the O'Donnell and Willard Patent the lower end of the mandrel rod is integral, forming a T-rod, with lugs extending outward in contact with the upper edges of the slots in the cutters. The cutters in both cases are separated completely to an expanded position by a partition between them, which partition has a hole for the passage of the mandrel rod and slot for the movement and directing of the key on the Double underreamer, and the lugs on the lower end of the T-rod in the O'Donnell and Willard underreamer. This partition remains partly between the cutters when in contracted position in both the Double underreamer and in the O'Donnell and Willard under-

(Deposition of W. W. Wilson.)

reamer. The contraction of the cutters is caused in both cases by the movement downward over the end partition, allowing the removal of the partition to allow the cutters to collapse together at their lower ends, and also by the movement outward of the shanks of the cutters in the O'Donnell and Willard underreamer bearing against the downwardly outwardly tapering faces of the pockets in which the cutters move, and in the Double underreamer caused by the upper ends of the dovetail of the cutters riding outwardly on the outwardly downwardly tapering of the dovetail shoulders on the body. The tilting of the cutters in both cases being complex, the movement of the slots in the shanks of the cutters being partly tilting and partly sliding in their movement to contracted or expanded position in both reamers. The outwardly downwardly tapering faces on the cutter pockets in the O'Donnell [295] and Willard underreamer, and also the outwardly downwardly tapering dovetail shoulders in the Double underreamer, are placed as they are to allow the spreading of the upper ends of the cutter shanks, which causes collapsing of the cutting points because of riding over a sliding fulcrum near the center of the cutter lengths. The operation of the reamers in running in a hole, expanding and withdrawing, is the same in both reamers. Q. 357. You have not yet replied to my question with respect to the comparison of the operation of these reamers with the features referred to eliminated from the O'Donnell and Willard reamer in encountering sticky and other

(Deposition of W. W. Wilson.)

unusual formations. Please do so. A. The action of both underreamers under this condition would be the same, namely, the cutters would tend to stick in the hole and when the body is moved upward the spring would be compressed until sufficient movement of the cutters has taken place to reduce the suction or tension exerted on the cutters sufficient to break the suction, which would allow the cutters to snap upward within the body. Q. 358. I now show you 'Defendant's Exhibit Wilson Underreamer Patent' and ask if you are familiar with the disclosure of the same? A. I am. Q. 359. I believe you have not yet summarized the disclosure of this patent. Please now do so. A. The underreamer shown in Wilson Underreamer Patent consists of a body, the usual upper means for the attachment of the tool being shown broken away in the drawing. The body has a hole drilled up from the bottom for the reception of a spring and a T-rod. The spring at its lower end bears against the block 7 held in position by retaining pins 8. The upper end of the spring bears against the threaded nut 19 at the top end of the T-rod 5'. The T-rod 5' extends downward through the spring and through the block 7 into the notch or space between the prongs on the lower end of the body. The lower end of the body or extension or that part below face 10 consists of two widely separated prongs 2, which have on their [296] inner faces ridges 3 and on their lower ends spreading-faces 9 and 17. These prongs extend downward, one on each side of the cutters, which cut-

(Deposition of W. W. Wilson.)

ters have ridges or dovetail shoulders on their sides 4², intended to engage the ridge 3 on the insides of the prongs. The cutters have on their inner faces pockets for the reception of the lugs on the lower end of the T-rod 5. The collapsing of the cutters is caused by their downward movement against the pull of the spring and the T-rod, which downward movement allows the cutters to pass down over and beyond the faces 9 on the prongs, and to slide inward with their upper edges of the faces 4³ bearing against the spreading-faces 17. The operation of the reamer consists in withdrawing the cutters to contracted position, placing the reamer in the casing and running it down beyond the casing, when the pressure on the outside of the cutters being released, the cutters, due to the spring-pressure, are moved upward into working position. The reaming operation is now conducted, and on its completion the reamer is drawn upward until the shoulders 30 on the cutter shank engage the casing shoe which holds the cutter stationary for a time until the body is withdrawn sufficiently to allow the cutters to move down in a collapsed position, when they follow the body up the casing to the surface. Mr. BLAKESLEE.—The defendant offers as an exhibit the certified copy of the records of the United States Patent Office of the file wrapper and contents in the matter of ‘Complainants’ Exhibit Double Patent,’ as ‘Defendant’s Exhibit Certified Copy File Wrapper and Contents Complainants’ Exhibit Double Patent.’” Those questions were asked and those answers given by you

(Deposition of W. W. Wilson.)

at that time, were they? A. Yes, sir.

Mr. LYON.—In connection with the examination of this witness we offer in evidence in this case the O'Donnell and Willard patent referred to, to wit, No. 762,435, dated June 14, [297] 1904, and ask that the same be marked "Defendant's Exhibit O'Donnell and Willard Patent."

Similarly, we offer in evidence the model referred to in this witness' answer to question 347, 348 and 349 just quoted, as "Defendant's Exhibit Partial O'Donnell and Willard Underreamer on Diminutive Scale," the same being on file as part of the records of this court in the said suit, and ask that the same be marked herein "Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale."

We also offer in evidence in connection with the testimony of this witness the said underreamer on file in said suit No. 1540 and therein marked "Defendant's Exhibit O'Donnell and Willard Underreamer," and ask that the same be marked "Defendant's Exhibit O'Donnell and Willard Underreamer."

And we also offer in evidence a copy of said Double patent 734,833 and ask that the same be marked "Defendant's Exhibit Double Patent No. 1."

Mr. BLAKESLEE.—We object to this last line of quotation as not being recross-examination and not the proper method of proof, and particularly in connection with the making of this *prima facie* case, and we object to the offer of each and every of the exhibits mentioned, as not the proper method of proof

(Deposition of W. W. Wilson.)

and not identified, and irrelevant, immaterial and incompetent.

Mr. LYON.—Recross-examination closed.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 209. With respect to the provision of the grooves in the inner spaces of the bodies of the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters," you have testified, I believe, before, that no such grooves occur in the inner faces of Complainant's Exhibit "Old Style Double Reamer Cutter No. 1"? Is that correct? [298]

A. Yes, sir.

Q. 210. Why do you take it that those grooves were not necessary in the old style Double reamer-cutter?

Mr. LYON.—Objected to as assuming facts not testified to by the witness, incompetent, no foundation laid, the witness not having qualified to answer the question, and as leading.

Q. 211. (By Mr. BLAKESLEE.) The question is revised by substituting the word "provided" for the word "necessary."

Mr. LYON.—The same objection.

(The question as amended is read as follows: "Why do you take it that those grooves were not provided in the old style Double reamer-cutter?")

A. The cutters in those reamers did not collapse so close together. Because of the thin pipe, smaller expansion was sufficient; and, furthermore, the use of a divided thrust-bearing was not known.

(Deposition of W. W. Wilson.)

Q. 212. (By Mr. BLAKESLEE.) When did the use of that divided thrust-bearing become known?

A. With the advent of the Wilson underreamer.

Q. 213. You mean like Complainant's Exhibit "Wilson Patent"? A. Yes, sir.

Q. 214. What caused the improved Double reamer like Complainant's Exhibit "Improved Double Reamer and Cutters," the increased expansion which accounted for the provision of the grooves in the thrust-bearings of the cutters?

A. It was necessary to give the cutters greater expansion, as thicker pipe with heavier collars came into use, because it was necessary to run the underreamer inside the pipe and to have the cutters expand to a diameter considerable in excess of the outside diameters of the collars of the pipe to permit the pipe to pass freely down the hole after underreaming operations. [299]

Q. 215. And what provision of the improved Double underreamer like Complainant's Exhibit "Improved Double Reamer and Cutters," caused this increased contraction?

A. The shank of the cutter was decreased in length from the edge of the inner thrust-bearing to the top of the cutter-shank. The cutter body was increased in length below the inner thrust-bearing. The cutters in collapsed position were permitted to come much closer together. The hollow-slotted extension was thickened somewhat.

Q. 216. Please compare the location of the fulcrum zone or line in the cutter, "Exhibit Improved

(Deposition of W. W. Wilson.)

Double Reamer and Cutters' cutter, with the fulcrum line of Complainant's Exhibit "Old Style Double Reamer Cutter No. 1," as to position.

Mr. LYON.—Objected to as not redirect examination, and as mere repetition, the witness having been over this ground several times in answer to questions by counsel for complainant; and upon the further ground that it is irrelevant and immaterial to the issues of this case.

A. The fulcrum line is raised on the cutter of the improved Double reamer and cutters cutter over what it was on the old style "Double Reamer Cutter No. 1."

Q. 217. (By Mr. BLAKESLEE.) And what connection, if any, was there between that and the increased collapsion of the cutters in the improved Double reamer?

A. This increased the collapsion because it increased the extent of the tilting.

Mr. BLAKESLEE.—That is all.

Recross-examination.

(By Mr. LYON.)

Q. 218. You have asserted in your last answers that the Wilson underreamer provided an increased expansion over that of the so-called old style Double underreamer. Do you understand such to be the case?

[300] A. I believe such is the case; yes, sir.

Q. 219. In the cutters or bits of the Wilson underreamer, either as shown in Complainant's Exhibit "Wilson Patent," or any of the Wilson underreamers manufactured by Wilson and Willard Manufac-

(Deposition of W. W. Wilson.)

turing Company, with which you state you are familiar, was there any groove or slot cut in the metal between the expansion-surfaces 4³ of the cutters thereof?

A. In the first Wilson underreamer made, according to the blue-prints, there is a cut downwardly between the bearing-surfaces 4³ at their lower portions.

Q. 220. I will ask you to produce said blue-print.

A. I was referring to the photograph thereof in Complainant's Exhibit "File Wrapper and Contents."

Q. 221. Have you any personal knowledge of the original of this drawing or the original underreamer or any original underreamer corresponding to such drawing?

Mr. BLAKESLEE.—Objected to as not recross-examination.

A. No, sir.

Q. 222. (By Mr. LYON.) Now, will you please answer the preceding question No. 219?

A. No, sir.

Q. 223. The inner thrust-bearing surface of the so-called Double improved underreamer-cutter, lies projected considerably inward of the body portion and shank, due to the use of the wall of the V-shaped slot of the shank along the wedge-like expansion of the bit? Is that correct?

A. It lies on the plane of the back of the cutter.

Q. 224. And projected, in the case of the bits of Complainant's Exhibit "Improved Double Reamer

(Deposition of W. W. Wilson.)

and Cutters," a good half-inch outward from the inner end or line of the lower wall of this V-shaped groove?

A. The V-shaped groove was cut into the back of the [301] cutter about, roughly, a half-inch.

Q. 225. And in the cutter of Complainant's Exhibit "Wilson Patent" and Complainant's Exhibit "Wilson Underreamer," the spreading-bearing faces 4³ are cut back below the plane of the inner face of the shank? Is that correct? A. Yes, sir.

Q. 226. To what extent would you say, comparatively?

Mr. BLAKESLEE.—Objected to as not the best evidence. The exhibit speaks for itself.

A. It is a varying degree.

Q. 227. (By Mr. LYON.) In the Wilson underreamer the projecting metal between these two spreading-bearing surfaces 4³, projects when the cutters are in the body of the reamer, between the two open prongs, does it? A. Yes, sir.

Q. 228. And in collapsion these parts may collapse together, there being no metal between them?

A. Yes, sir.

Mr. LYON.—That is all.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 229. Please compare the groove in the back of the spreading-bearing of the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" with the terminal portion of the shank between the spreading-bearings of the cutters of Complain-

(Deposition of W. W. Wilson.)

ant's Exhibit "Wilson Reamer," with respect to their relation to the lateral bearing faces and the relative arrangement of said faces. That is, compare in these respects the groove and the terminal portion of the shank.

A. Both of these tend to divide the bearing-surfaces into two laterally displaced faces. [302]

Mr. BLAKESLEE.—That is all.

Mr. LYON.—That is all.

Mr. BLAKESLEE.—The witness is excused, subject to such recall as may be desirable.

(By consent of counsel the further taking of proofs on behalf of complainant is now postponed until tomorrow, Friday, April 24, 1914, at the hour of 10 o'clock A. M., at the office of solicitor for complainant.)

Friday, April 24, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs in this case was continued, a further continuance is now taken until the hour of 11 o'clock of this day at this same place.

Friday, April 24, 1914, 11 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until 3 o'clock P. M. of this day.

Friday, April 24, 1914, 3 o'clock P. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until Saturday, April 25, 1914, at 10 o'clock A. M.

Saturday, April 25, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until Tuesday, May 12, 1914, at 10 o'clock A. M. [303]

[Endorsed]: R. No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proofs Taken on Behalf of Complainant. Filed Dec. 12, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [304]

United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

This being the time and place specified in a notice for taking further proofs in the above-entitled cause, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Mr. BLAKESLEE.—Further proofs taken on behalf of complainant in re Elihu C. Wilson, complain-

ant, vs. Union Tool Company, defendant, in equity, No. A-4, pursuant to notice, at the office of Raymond Ives Blakeslee, counsel for complainant, room 728-729-730 California Building, Los Angeles, California, commencing at the hour of 10 o'clock A. M., December 11, 1914, before Francis L. Isgrigg, Notary Public, and I. Benjamin, Notary Public, such proceedings likewise being continued under the stipulation of record providing for the taking of proofs. Present: Raymond Ives Blakeslee, Esq., counsel for complainant; Frederick S. Lyon, Esq., counsel for defendant.

Mr. BLAKESLEE.—Counsel for complainant at this point states that the notary I. Benjamin, before whom the preceding proofs in this action have been taken, may, if counsel for [305] defendant so demands, certify the remaining portion of the uncompleted deposition of the party Wilson herein referred to, and that such deposition portion will likewise be certified by the notary Francis L. Isgrigg, and the record, pursuant to the stipulation as to the taking of proofs, will be taken stenographically by a person other than said notary public I. Benjamin, and under the supervision of said notary public Francis L. Isgrigg, in addition to such supervision as said I. Benjamin may offer. The succeeding or further depositions of witnesses produced on behalf of complainant will be taken and all procedure on behalf of complainant in connection therewith had under the supervision of said notary public Francis L. Isgrigg and by some other person taken stenographically; all such record portions hereafter taken in

this case on behalf of complainant stenographically to be transcribed likewise under the direction and supervision of said notary public Francis L. Isgrigg. Counsel for complainant likewise now produces the witness party Elihu C. Wilson to further testify under cross-examination which was interrupted by the motion of defendant to compel such witness to testify as to the date of construction of the first Wilson reamer with the key confining the spring, as complainant has consented, subsequent to the development of this testimony in another contested matter, to the giving of such testimony by said witness. The party Wilson is now ready for such further cross-examination, and we give notice that as to the further witnesses on behalf of complainant we are now prepared to state that one of the same will be Charles E. Wilcox of East Bakersfield and Los Angeles, California, and James C. Hubbard, of Los Angeles, California. We wish further to definitely state that complainant will not be responsible for the pay of any other person than that person delegated by the notary public Francis L. Isgrigg to take the further record in cross-examination or redirect et cetera, of the party Wilson, and [306] particularly will not be responsible for the pay of the notary public I. Benjamin for taking any such testimony or any further part of the record in this case.

Mr. LYON.—Do I understand counsel for complainant to state that the complainant declines to produce before I. Benjamin as notary public the witness E. C. Wilson for his further cross-examination

in this case subject to and in accordance with the rule and order of this court, and that the complainant refuses to pay the said I. Benjamin for taking, certifying or returning any portion of said deposition?

Mr. BLAKESLEE.—If counsel for defendant wishes to know the position of complainant further in these matters, we will elucidate. We have produced and again produce the witness party Wilson for further cross-examination, and we have notified the notary public of this procedure and he is here, and we agree to his certification of the further deposition or continued deposition of the witness party Wilson, and we do not intend to interfere with his so certifying to the rest of such deposition. The stipulation as to taking proofs in this case does not provide that the notary shall delegate the reporter who shall take any of the proofs in this case, but relies upon the statute which prescribes that such depositions are to be taken under the supervision of the notary public, and the notary public I. Benjamin may supervise all he wishes to as to the further deposition of the party Wilson short of delegating the person who writes and transcribes the deposition, which does not come within the spirit of the stipulation mentioned, and we decline to meet and defray the expense or any expense or charge of the notary public I. Benjamin with respect to any further reporting of any deposition in this case. We again repeat that the notary public may certify as fully as he wishes the further procedure on the

deposition of the party [307] E. C. Wilson in this case, and in that connection we call attention to the fact that it has been the custom of such notary I. Benjamin to certify depositions taken before counsel present in this or other matters which were reported directly by a person other than himself. We do not in any sense desire to prevent any proper certification of this deposition. Furthermore, this procedure in further cross-examination of the party Wilson is in response to a consent on behalf of complainant that the testimony sought for having been properly adduced previously in another proceeding; such testimony might now be adduced in this proceeding; and counsel for defendant does not produce here any showing of any order which appears to be in conflict with the complainant's position.

Mr. LYON.—The records of the minutes of this court speak for themselves as to such order. Counsel for complainant and counsel for defendant were present when such order was made, and the notary I. Benjamin was present with the record in this case at the time of the hearing of such motion, and when the order for the further production of the witness E. C. Wilson and that he answer the questions referred to the court was made. Defendant declines absolutely to proceed with the record of the cross-examination of this witness E. C. Wilson in this case taken or certified by any other person or under the direction of any other person than the notary I. Benjamin, under whose supervision and before whom this deposition has heretofore been partially taken,

and before whom it was being taken, and if the position of complainant and complainant's counsel as indicated on the record, is, that complainant will not pay the expense incident to the attendance, stenographically taking, and transcription of the further cross-examination of this witness E. C. Wilson in this case, by the notary I. Benjamin or under his direction, we decline to further proceed, and ask the immediate and forthwith certification of the record to the court and give notice of motion that [308] the court order the witness E. C. Wilson produced before I. Benjamin, notary public, to complete the said deposition; and that upon failure of complainant so to produce the said witness, the entire deposition of E. C. Wilson heretofore taken in this case be stricken from the files in this case and suppressed. I know nothing of the notary Francis L. Isgrigg in this proceeding or otherwise. I am not acquainted with him. I have no knowledge of or acquaintance with the person whom he under the direction of counsel for complainant desires to or will direct to take or transcribe the alleged cross-examination, and unless such person is known to and vouched for by the notary I. Benjamin, I shall and do decline to permit such person to in any manner officiate herein. This demand for the certification of the record is final. It is not the duty of the defendant to assume any of the cost of taking or certifying or returning of this deposition, and it is apparent that the deposition cannot proceed under the stipulation herein as counsel for complainant and complainant maintain the posi-

tion they have taken. I do not accede to the interpretation placed upon the stipulation by counsel for complainant, and give notice that at the same time that said motion is heard I shall move the court to appoint someone as special examiner to take the testimony and depositions in this case to avoid the possibility of this situation arising again in the future; and I further give notice that if the court does not deem it expedient to appoint such special examiner, I shall at the same time move, and do now move, that the stipulation heretofore entered into be set aside and the case heard in open court. The notary I. Benjamin now present will certify this morning's proceedings forthwith to the court, and such motion will be placed upon the motion calendar of this court for Monday, December 14, 1914, at 10:30 A. M., or as soon thereafter as counsel can be heard, and I give notice that I shall ask the court for an order restraining any [309] further proceedings in this case until this motion can be heard.

Mr. BLAKESLEE.—The parties to this case are bound by the stipulation, and under that stipulation certain procedure is provided for. We do not care whether counsel for defendant knows the notary Francis L. Isgrigg or not. He was notified that we would proceed at this time before such notary, and we do not believe there is any ground for differentiating between him and the notary I. Benjamin with respect to any notarial qualifications. Counsel for complainant is under instructions from complainant not to employ the notary public I. Benjamin any

further as stenographer or reporter in this matter, or any other matter, for reasons which are immaterial to this record, and counsel for complainant is simply following complainant's instructions and permitting certification of the further deposition of the party Wilson by the notary public I. Benjamin. In view of the motion of counsel for the defendant, we assume that he declines to now further cross-examine the witness party Wilson. We call his attention to the fact that his motion as shown on this record in this respect to compel the witness to testify was for an order requiring the witness to answer a certain question. The witness is here now to answer that question, and that is as far as the motion went. In view of the refusal of counsel for the defendant to proceed with the cross-examination of the party Wilson, we will call another witness, namely, Charles E. Wilcox, and proceed with his deposition before the notary public Francis L. Isgrigg and under his supervision.

Mr. LYON.—I stand on my right to complete the cross-examination of the witness E. C. Wilson and to have such cross-examination made a part of the deposition and taken and certified to and returned by the notary I. Benjamin. I do not waive that right. I object to any further proceedings in the case until that cross-examination is completed. I now ask the notary I. Benjamin [310] if he knows anything of the purported shorthand reporter presented in the room by counsel for complainant or by the notary Isgrigg, and whether he will certify

and vouch for any transcript made by such party. I know nothing of such stenographer.

The Notary BENJAMIN.—I do not believe that I have ever seen either of these parties before, and I will not vouch for the work of anyone excepting my own or of someone delegated by me to do the work in my place, or of someone selected by stipulation of counsel for both parties. If counsel for both parties agree upon any reporter and will stipulate as to the form of the certificate and work of such reporter, I will very gladly make certification accordingly.

Mr. BLAKESLEE.—Under the statutes contemplated for taking proofs in this case, there is no requirement that the notary be the stenographer or reporter, and there is no requirement that the same stenographer be used continuously in the taking of any deposition. In fact the statute contemplates taking depositions before magistrates or other persons who are not assumed to be competent to even take the depositions physically in any manner whatsoever. We produce here a competent deposition reporter of long experience, furnished by the notary public Francis L. Isgrigg, and offer this reporter for the purpose of taking the remaining portion of this deposition which is to be paid for by us if taken by her. We believe we have the proper right to elect as to who shall do the physical reporting of the deposition and procedure in connection therewith. As to the further procedure in the case prior to the completion of the deposition of the party Wilson,

there is no order extant forbidding such procedure, and, in fact, further procedure was had in this case after the motion was made to compel the party Wilson to further testify. That said further procedure was had in connection with another [311] witness. We will now proceed to examine the witness Charles E. Wilcox under the supervision of the notary Francis L. Isgrigg, and with the service of the other stenographer Helen Van Upp, hereinbefore referred to at this session.

Mr. LYON.—The notary I. Benjamin will certify the proceedings of this morning to the Court in accordance with the demand of counsel for defendant, and request the clerk of the Court to place said motion upon the motion calendar for the time indicated, and notice is given that application will be made to-day for a restraining order to prevent further proceedings in this case until such motion is heard and determined.

Mr. BLAKESLEE.—Such a restraining order has been refused by this Court under similar circumstances, on application therefor having been made by counsel for defendant here present, and with such refusal as a precedent, we proceed with another witness as above stated.

Mr. LYON.—The statement of counsel is inaccurate. In the case referred to permission was given to take the direct examination of other witnesses upon the consent of counsel for defendant, myself, with an agreement that the deposition of such wit-

ness should be suspended whenever a similar question arose with respect to the witness answering a question, as will be found by the procedure and record in equity suit No. A-110 pending in this Court, the original of which record is now in the possession of the present notary I. Benjamin. Clearly complainant cannot compel the defendant to assume or pay the cost of attendance or notary's fees, either for attendance in taking, transcribing or returning any portion of this deposition, and we stand upon our right.

Mr. BLAKESLEE.—Counsel's observations apparently do not point to any inaccuracies of the previous statement of counsel for complainant. [312]

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, a notary public in and for the county of Los Angeles, state of California, duly commissioned, sworn and qualified to administer oaths, etc., do hereby certify that the foregoing is a full, true and correct transcript of the proceedings taken on this eleventh day of December, 1914, in the above-entitled cause, in respect to the completion of the cross-examination of the witness party Elihu C. Wilson. That pursuant to the request of counsel for the defendant made on the record, I hereby certify and return the said proceedings of the said day, and hereby certify that the same is a full, true and correct transcript of such proceedings.

IN WITNESS WHEREOF, I have hereunto set

my hand and affixed my official seal on this 11th day of December, 1914.

[Seal]

I. BENJAMIN,
Notary Public in and for Los Angeles County, State
of California.

[Documentary Stamp.]

[Endorsed]: In Equity—No. A-4. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proceedings on Behalf of Elihu C. Wilson, Before I. Benjamin, Notary Public. December 11th, 1914. Filed Dec. 12, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [313]

In the United States District Court, Southern Division of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Proceedings Had December 11, 1914.

Further proofs taken on behalf of complainant, *in re* Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, in Equity—No. A-4, pursuant to notice, at the office of Raymond Ives Blakeslee, counsel for complainant, at rooms 728-729-730 Cali-

ifornia Building, Los Angeles, California, commencing at the hour of ten o'clock A. M., December 11th, 1914, before Francis L. Isgrigg, Notary Public, and I. Benjamin, Notary Public, such procedure likewise being continued under stipulation and record as provided for the taking of proofs.

Present: RAYMOND IVES BLAKESLEE, Esquire, Counsel for Complainant and
FREDERICK S. LYON, Esquire, Counsel for Defendant.

Mr. BLAKESLEE.—Counsel for complainant at this point states that the notary, I. Benjamin, before whom the proceedings and proofs in this case have been taken, may, if counsel for defendant so demands, certify to the remaining portion of the uncompleted deposition of the party Wilson herein, but that such deposition portion will likewise be certified by the notary, Francis L. Isgrigg, and the record pursuant to the stipulation as to the taking of proofs will be taken stenographically by a person other than such notary public, I. Benjamin, and under the supervision [314] of said notary public, Francis L. Isgrigg, in addition to such supervision as said notary public, I. Benjamin may offer.

The succeeding, or further depositions of any witnesses produced on behalf of the complainant will be taken, and all procedure on behalf of the complainant in connection therewith had, under the supervision of said notary public, Francis L. Isgrigg, and by some other person taken stenographically; all such record portions hereafter taken in this case

in behalf of the complainant, stenographically, to be transcribed likewise under the direction and supervision of said notary public, Francis L. Isgrigg.

Counsel for complainant likewise now produces the witness party Elihu C. Wilson to further testify under cross-examination, which was interrupted by a motion of the defendant to compel such witness to testify as to the date of production of the first Wilson Reamer with the key-confining spring, as complainant has consented subsequent to the development of this testimony and in another contested matter to the giving of such testimony by said witness. The party witness Wilson is now ready for such further cross-examination, and we give notice that as to further witnesses on behalf of the complainant, we are now prepared to state that one of the same will be Charles E. Wilcox of Los Angeles and East Bakersfield, California, and another, James C. Hubbard of Los Angeles, California; and, we wish further to definitely state that the complainant will not be responsible for the pay of any other person than that person delegated by the notary public, Francis L. Isgrigg, to take the further record in the cross-examination, or redirect, etcetera, of the party witness Wilson, and particularly will not be responsible for the pay of the notary public, I. Benjamin for the taking of any such testimony, or any further part of the record in this case.

Mr. LYON.—Do I understand counsel for complainant to state [315] that the complainant de-

clines to produce before I. Benjamin, as notary public, the witness E. C. Wilson for his further cross-examination in this case, subject to, and in accordance with the rule and order of this Court, and that claimant refuses to pay the said I. Benjamin for taking, certifying, or returning *and* portion of said deposition? .

Mr. BLAKESLEE.—If counsel for defendant wishes to know the position of complainant further in this matter, we will elucidate. We have produced, and again produce, the witness party E. C. Wilson for further cross-examination and we have notified the notary public of this procedure, and he is here and we agree to his certification of the further deposition, or continued deposition of the witness party Wilson, and we do not intend to interfere with his so certifying to this deposition. The stipulation as to the taking of proofs in this case does not provide that the notary public shall delegate the reporter who shall take any of the proofs in this case, but relies upon the statute which prescribes that such depositions are to be taken under the supervision of the notary public, and the notary public, I. Benjamin, may certify all he wishes as to further depositions of the witness party Wilson, short of delegating the person who actually writes down and transcribes the deposition, which does not come within the spirit of the stipulation mentioned, and we decline to meet and defray the expense, or any expense, or charge of the notary public, I. Benjamin, with respect to any further reporting of any

depositions in this case. We again repeat that the notary public may certify as fully as he wishes the further procedure on the deposition of the party, E. C. Wilson, in this case, and in that connection we call attention to the fact that it has been the custom of said notary public, I. Benjamin, to certify depositions taken before counsel present, in this, or other matters, which were reported by a person other than himself. [316] We do not in any way desire to prevent any proper certification of this deposition. Furthermore, this procedure in cross-examination of the witness party Wilson is in response to the consent on behalf of the claimant, that the testimony sought for having been adduced previously in another proceeding, such testimony might now be adduced in this proceeding, and counsel for defendant does not produce here any showing of any order which appears to be in conflict with complainant's position.

Mr. LYON.—The record and the minutes of this Court speak for themselves as to such order. Counsel for complainant and counsel for defendant were present when such order was made and the notary, I. Benjamin, was present with the record in this case at the time of the hearing of such motion, and when the order for the further production of the witness, E. C. Wilson, and that he answer the questions referred to the Court, was made. Defendant declines absolutely to proceed with the record of the cross-examination of this witness, E. C. Wilson, in this case, taken or certified by any other person, or

under the direction of any other person than the notary public, I. Benjamin, before whom and under whose supervision this deposition has been heretofore partially taken, and before whom it was being taken, and if the position of the complainant, and complainant's counsel is as indicated on the record, that claimant will not pay the expense incident to the attendance and stenographic taking and transcription of the further cross-examination of this witness, E. C. Wilson, in this case, by the notary, I. Benjamin, or under his direction, we decline to further proceed and ask the immediate and forthwith certification of the record to the Court, and give notice of motion that we shall ask that the Court order the witness, E. C. Wilson, produced before I. Benjamin, notary public, to complete the said deposition, and that upon the failure of claimant so to produce the said witness, the entire [317] deposition of E. C. Wilson heretofore taken in this case, be stricken from the files in this case and suppressed. I know nothing of the notary, Francis L. Isgrigg, in this proceeding or otherwise; I am not acquainted with him; I do not know whether he is, or is not impartial. I have no knowledge of, or acquaintance with the person who he, under the direction of counsel for complainant, desires to take, or will direct to take, or transcribe, the cross-examination, and unless such person is known to, and is vouched for by the notary public, I. Benjamin, I shall and do, decline to permit such person to in any manner officiate herein. This demand for the certification

of the record is final. It is not the duty of the defendant to assume any of the costs of taking, or certifying, or returning of this deposition, and it is apparent that the deposition cannot proceed under the stipulation herein, if counsel for claimant, and complainant, maintains the position that they have taken. I do not accede to the interpretation placed upon the stipulation by counsel for complainant, and give notice that at the same time said notice is heard, I shall move the Court to appoint some one as special examiner, to take the testimony and depositions in this case, to avoid the possibility of this situation arising again in the future. And further give notice that if the Court does not deem it expedient to appoint such special examiner, I shall at the same time move, and do now move, that the stipulation heretofore entered into, be set aside and the case heard in open court. The notary, I. Benjamin, now present, will certify this morning's proceedings forthwith to the Court, and such motion will be placed upon the motion calendar of this Court for Monday, December 14th, 1914, at the hour of ten-thirty A. M., or as soon thereafter as counsel can be heard, and I give notice that I shall ask the Court for an order restraining any further proceedings in this case until such motion can be heard.

[318]

Mr. BLAKESLEE.—The parties to this case are bound by the stipulation and under that stipulation certain procedure is provided for. We do not care whether counsel for the defendant knows the notary,

Francis L. Isgrigg, or not. He was notified that we would proceed at this time before such notary, and we do not believe there is any ground for differentiating between him and the notary, I. Benjamin with respect to any notarial qualifications. Counsel for complainant is under instructions from complainant not to employ the notary public, I. Benjamin any further as stenographer or reporter in this matter, or any other matter, for reasons which are immaterial to this record. Counsel for complainant is simply following complainant's instructions not to permit the certification of the further deposition of the party Wilson by the notary public, I. Benjamin. In view of the motion of counsel for the defendant, we assume that he declines to *any* further cross-examine the witness party Wilson and we call his attention to the fact that his motion as shown in the record in this respect to compel the witness Wilson to testify, was for an order requiring the witness to answer a certain question; the witness is here now to answer that question, and that is as far as the motion went. In view of the refusal of counsel for defendant to proceed with the cross-examination of the witness party Wilson, we will call another witness, namely, Charles E. Wilcox, and proceed with his deposition before the notary, Francis L. Isgrigg, and under his supervision.

Mr. LYON.—I stand on my right to complete the cross-examination of the witness E. C. Wilson, and to have such cross-examination made a part of the deposition, and taken and certified to and returned by the notary, I. Benjamin. I do not waive that

right. I object to any further proceedings in the case until that cross-examination [319] is completed. I now ask the notary public if he knows anything of the shorthand reporter presented in this room by counsel, or of the notary, Isgrigg, and whether he would be willing to certify to and vouch for any transcript made by such party. I know nothing of such stenographer.

The Notary, I. BENJAMIN.—I do not believe that I have even seen either of these persons before, and I will not vouch for anybody's work unless one whom I know and one who is delegated by me to perform work in my place; or some one selected by stipulation of counsel for both parties. If counsel for both parties agree upon any reporter and will stipulate as to the form and the certificate of the work of such reporter, I will very gladly make certification accordingly.

Mr. BLAKESLEE.—Under the statutes contemplated for the taking of proofs in this case, there is no requirement that the notary be the stenographer or reporter, and there is no requirement that the same stenographer be used continuously in the taking of any deposition; in fact, the statute contemplates the taking of such deposition before magistrates, or other persons who are not presumed to be competent to even take the deposition physically, or in any other manner whatsoever. We produce here a competent deposition reporter of long experience, furnished by the notary public, Francis L. Isgrigg, and offer this reporter for the purpose of taking the remaining por-

tion of this deposition, which is to be paid for by us if taken by her. We believe we have the proper right to select the person who shall do the physical reporting of the deposition and procedure in connection therewith. As to further procedure in this case, prior to the completion of the deposition of the party Wilson, there is no order extant forbidding such procedure, in fact further procedure was had in this case [320] after the motion was made to compel the party Wilson to further testify. That said further procedure was had in connection with another witness. We will now proceed to examine the witness, Charles E. Wilcox, under the supervision of the notary, Francis L. Isgrigg, and with the service of the other stenographer, Helen Van Upp, hereinbefore referred to at this session.

Mr. LYON.—The notary, I. Benjamin, will certify the proceedings of this morning's work to the Court in accordance with the demand of counsel for the defendant, and request the clerk of the court to place said motion upon the motion calendar for the time indicated. Notice is given that application will be made to-day for the restraining order to prevent further proceedings in this case, until such motion is heard and determined.

Mr. BLAKESLEE.—Such a restraining order has been refused by this court under similar circumstances, an application therefore having been made by counsel for defendant here present, and with such refusal as a precedent, we will proceed with another witness as above mentioned.

(Deposition of Charles E. Wilcox.)

Mr. LYON.—Statement of counsel for complainant is inaccurate in the case referred to. Permission was given to take the direct examination of other witnesses upon consent of counsel for defendant, myself, with an agreement that the deposition of such witnesses should be suspended whenever a similar question arose with respect to the witness answering the question, as will be found by the procedure and record in equity suit A-110 pending in this court, the original of which record is now in the possession of the notary I. Benjamin. Clearly, complainant cannot compel the defendant to assume or pay the costs of attendance, or notary's fees, either for attendance, taking, transcribing, or returning [321] any portion of this deposition, and we stand upon our rights.

Mr. BLAKESLEE.—Counsel's observations apparently do not point to any inaccuracy in the previous statement of counsel for complainant.

Whereupon the following proceedings were had :

Deposition of Charles E. Wilcox, for Complainant.

CHARLES E. WILCOX, called as a witness on behalf of the complainant, sworn by the notary public, Francis L. Isgrigg.

CHARLES E. WILCOX, witness produced on behalf of the complainant, being duly sworn according to law, deposes as follows and answers the questions put by Mr. Blakeslee, being sworn by the notary, Francis L. Isgrigg, and the record being taken stenographically and to be transcribed by the re-

(Deposition of Charles E. Wilcox.)

porter Helen Van Upp, under the supervision of said notary public, Francis L. Isgrigg.

Mr. LYON.—The swearing of the witness Elihu C. Wilson in the manner stated by counsel for complainant is objected to and the swearing of the witness Charles E. Wilcox and the taking of his deposition in this case is objected to at this time. Notice has been given of an application for an order restraining any further proceedings in this case until the hearing of the motion to compel the witness E. C. Wilson to appear before I. Benjamin, Notary Public, and complete his deposition in this case and answer questions on cross-examination in accordance with the order of this Court. Defendant protests against any attempt to circumvent such motion or application for a restraining order, and objects both to the notary, Francis L. Isgrigg and to the purported stenographer, as incompetent in this case and any appearance further on behalf of the defendant in this case, during the alleged taking, or purported taking, of the deposition of Charles E. Wilcox will not be considered a waiver of such objection, but will be subject to the ruling of the Court thereon, and a motion now made to strike any [322] such purported deposition from the record; and any proceeding hereafter taken will be subject to such motion. The complainant, and his counsel, both present here in the room, are notified that as soon as the notary, I. Benjamin, can transcribe the report of the proceedings of this morning, the same will be presented, with the record of the deposition of E. C. Wilson, so far as now

completed, to one of the Judges of this court; such application being made for such restraining order forthwith, and demand is now made that this proceeding be suspended at least, until two (2) o'clock, pending the hearing of such application.

Mr. BLAKESLEE.—We shall, of course, expect better notice of the specific hour at which the motion to 'suspend this proceeding is presented by counsel for defendant. If it is to be purely an *ex parte* procedure, it is, of course, not incumbent upon us in any respect to pay any attention to any such motion, until such order may be made in the premises. We, of course, will respect any order that is made in the premises, on either of the motions this morning, but with the belief that we are clearly within our rights as to proceeding with any other witnesses at this time, and in order not to waste an hour or two, we will proceed with the witness being sworn.

Witness is sworn by the notary public, Francis L. Isgrigg.

Mr. LYON.—I will ask if the record, or purported record as here attempted to be made in this proceeding, has been fully dictated to the alleged stenographer, the notary being present in the room. My purpose in so asking is that, if a new record has been made, I caution the notary public that nothing new shall be added to that record, or taken therefrom. In this connection, call the attention of the notary, as well as the attention of the complainant and complainant's counsel, to the fact that any proceeding [323] taken in connection

with the cross-examination of E. C. Wilson, cannot be certified to by, or returned by this notary. He has no authority to act therein, and any record of any further deposition in this case shall be as an original deposition, under notice. Objection is now made further that no notice has been taken of the testimony of this witness in accordance with the provisions of the Revised Statutes of the United States, and this objection will also be understood as insisted upon, and not as waived, by any further attendance by counsel for defendant; such attendance being under protest, and solely to protect any rights of the defendant, pending the writing up and presentation to the Court, of the defendant's motion for a restraining order herein.

Mr. BLAKESLEE.—The notary public may state on the record, whether or not he has been present during the taking of the record in this matter, this morning, at the present hour and minute.

Mr. ISGRIGG.—I will state at this time that I have been present beginning and during the taking of the dictation of this hearing this morning.

Mr. BLAKESLEE.—And all of the same?

Mr. ISGRIGG.—Yes, sir.

Mr. BLAKESLEE.—We do not desire to take counsel for defendant by surprise with respect to the witness just produced. He knows him well, and in fact we believe he has approached him a number of times within the last few months and attempted to get his assistance with respect to matters which are pending between the complainant and the defendant and other parties associated therewith. [324] We gave

(Deposition of Charles E. Wilcox.)

notice duly of the production of the party Wilson for further cross-examination this morning and he is still here; and we also gave notice of the present witness Wilcox at the beginning of the proceedings this morning, in order that we might not waste a day because of counsel for defendant's attitude with regard to further cross-examination of the witness party wilson. The person Wilson is well known, as we have said to counsel for defendant, and if he desires, he may defray his cross-examination for a few days.

Mr. LYON.—Without waiving any objections hereafter to the record, or in any other manner waiving any objection to any proceeding herein, notice is given that complainant's counsel will demand, and does demand, that the deposition of this witness be reduced to typewriting and a copy thereof delivered to defendant's counsel, before defendant's counsel is required to cross-examine the witness.

Direct Examination of CHARLES E. WILCOX.
(By Mr. BLAKESLEE.)

Q. 1. Will you please state your full name; your residence, your age, and your occupation?

A. Charles E. Wilcox; 752 South Main Street, Los Angeles, California; age, forty-seven; salesman for Wilson & Willard Manufacturing Company.

Q. 2. What business is the Wilson & Willard Manufacturing Company?

A. Manufacturing of oil well tools.

Q. 3. Where located?

A. Fifteenth and Santa Fe Avenue, Los Angeles.

Q. 4. How long have you been connected with that

(Deposition of Charles E. Wilcox.)

concern? A. Since November—December, 1910.

Q. 5. What sort of things have you sold for that concern? [325] A. Elevators—underreamers.

Q. 6. What are underreamers used for?

A. For enlarging holes in oil drilling.

Q. 7. What, if any, name is given to such underreamers in the trade?

A. I believe it is called the Wilson Underreamer.

By Mr. LYON.—I move to strike the answer from the record on the ground that it is incompetent, not the best evidence and merely a conclusion, a guess and an expression of opinion of the witness.

Q. 8. By what name do you call such underreamers when you are selling them?

A. Wilson Reamers.

Q. 9. Did you ever hear anybody else call them the Wilson Reamer?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 10. And whom, for instance?

A. Well, in fact everybody that speaks of them, that particular type of Reamer, calls it the Wilson Reamer.

Q. 11. Do you find a specimen, or see a specimen of any such reamer in the room here? A. Yes, sir.

Q. 12. Point it out, please.

(Witness points to complainant's "Wilson Underreamer exhibit.")

Mr. LYON.—It is to be noted on the record that upon the devise pointed out by the witness there is no mark of identification of any kind, excepting in

(Deposition of Charles E. Wilcox.)

the handwriting of the counsel for complainant. No marking of such, as an exhibit in this case, appears [326] thereon, and the statement of counsel just made on the record is objected to, as not the best evidence and incompetent.

Mr. BLAKESLEE.—We admit that the present tag is in the handwriting of the counsel for complainant. It is a temporary tag and if there is not a proper tag on that exhibit, it must be due to the dereliction of the notary public, I. Benjamin, who is supposed to mark the same. There is no denial, as we understand it, that this is the exhibit in question, and it will again be properly tagged before the conclusion of this proceeding.

Mr. LYON.—There is nothing apparently to show that this is the exhibit referred to, and it is not possible for counsel for defendant to identify it. It should be properly identified if the record is to show that the witness pointed to anything which has been offered in the evidence, as, or under the title of the exhibit referred to by complainant's counsel. The exhibits heretofore offered in the evidence in this case, have been retained at all times in the custody of the counsel for complainant, and if the said exhibits, or the identification marked thereon have been mutilated, it is not the fault of the defendant, or the fault of the notary, it is entirely a matter which has been, and is, in the control of counsel for complainant. I suggest, in order to avoid this question, that if the tags on these exhibits have been removed, or destroyed, that new identification marks be placed

thereon by the notary who marked them, and that they be properly re-identified before proceeding further, although objection is made to any proceeding at this time, as heretofore stated.

Mr. BLAKESLEE.—If counsel for defendant will thoroughly inspect these exhibits, he will find there is a portion of the original tag on this exhibit still adhering thereto. There are a number of [327] exhibits on the floor in this case which have been here some six or eight months, which weigh approximately a half ton and which cannot be put in any safe or desk, or other over night depository. Counsel for complainant has probably walked over these exhibits fifteen or twenty times, probably fifty, during that time, and it has been impossible to keep the tags in proper shape.

We have also placed a temporary tag upon another exhibit in the case, on the floor here, and will see to it that these exhibits are reidentified before the conclusion of these proceedings by the notary whose duty it is to certify to these marks, such notary having originally identified these exhibits.

Mr. LYON.—Under the Stipulation, these exhibits have been retained in the custody of the counsel for complainant, and I understand all the exhibits in this case, so far introduced, have been retained by him in his office, and there has not been any dereliction of duty on the party of the notary, I. Benjamin. He originally marked and identified these exhibits in the presence of counsel for both parties. If the device referred to is one of these exhibits, or is to be referred

(Deposition of Charles E. Wilcox.)

to as one of these former exhibits, it should now be remarked by an identification tag, placed thereon by the notary, I. Benjamin, to take the place of the one which has been removed in the office of counsel for complainant. Defendants certainly have the right to insist that if these pieces of iron are to be referred to as exhibits in this case and as heretofore offered in evidence in this case, they should at least be identified by the notary who made such identification, and before whom they were offered in evidence.

Mr. BLAKESLEE.—We understand that counsel for defendant demands immediate reidentification or refreshment of the identification by the notary, I. Benjamin, who originally identified them by tags, and we will therefore immediately request his appearance for that purpose and suspend proceedings for that purpose. [328]

We understand now that counsel for defendant both demands that the notary, I. Benjamin, proceed with his certification and likewise, retag these exhibits. Over the telephone, the said notary has stated that he is giving preference to the certification and upon its completion will at once repair to this place, where he will retag such exhibits as necessary.

During the possible infinitesimal interim, we will continue this examination, and counsel for complainant will take the stand, to more fully identify the exhibits in question, as to which tags have become damaged or lost, if such demand is made by the notary or counsel for defendant.

(By Mr. BLAKESLEE.)

Q. 13. How long have you been selling Wilson

(Deposition of Charles E. Wilcox.)

Reamers? A. About four years.

Q. 14. Can you state, approximately, how many you have sold? A. No, I could not.

Q. 15. Can you state, approximately, how many you have sold the last year? A. Maybe fifty.

Q. 16. Can you state the names of any persons or concerns to whom you have sold any such Wilson Reamers during the last year? A. Yes, sir.

Q. 17. Please do so and state where such concerns are located, giving place and state.

A. Standard Oil Company of Fullerton Fields, California; Coalinga Land Company, Coalinga, California; Columbia Oil Company, Fullerton, California; Cornerstone Oil Company, Fullerton Fields, California; Dorsby Oil Company, Fullerton Fields, California; Burch Oil Company, Vera Canyon, California; [329] Vera Canyon Oil Company, Vera Canyon, California; Union Oil Company, Fullerton Fields, California; California County Oil Company, Ventura County, Calif.; Traders Oil Company, Ventura County, Calif.; Standard Oil Company, Newhall Fields, California; Central Oil Company, Whittier, California; Standard Oil Company, Whittier, California; Murphy Oil Company, Whittier Field, California; Sunset Security Company, Kern County, California; El Camina Oil Company, Kern County, California; Midway Oil Company, Kern County, California; Midway Pacific Oil Company, Kern County, California; Newcenter Oil Company, Kern County, California; Adeline Oil Company, Kern County, California; Knickerbocker Oil Company, Kern County, California; Baltimore Oil Company,

(Deposition of Charles E. Wilcox.)

Kern County, California; Section 25 Oil Company, Kern County, California; Boston Pacific Oil Company, Kern County, California; Union Oil Company, Kern County, California.

(Mr. BLAKESLEE.)

Q. 18. Have you sold each and every one of these concerns during the last twelve months?

Mr. LYON.—Objected to as leading.

A. Well, I have not sold them direct. I believe that there has been that many Wilson Reamers sold within that time. This business goes through the supply-houses and I do not get the order direct.

Q. 19. Are you able to say whether or not you have called upon all of these several concerns during the last twelve months?

Mr. LYON.—Same objection. [330]

A. Practically all, yes, sir.

Q. 20. Did you see any reamers in use by any of these concerns at the time of such calls?

A. Yes, sir.

Q. 21. What reamers were they using?

A. They were using Wilson reamers.

Q. 22. Do you know whether any of these concerns had previously used any other reamer than the Wilson reamer? A. Yes, sir.

Q. 23. And what reamer?

A. The reamer known and spoken of as the Double reamer.

Q. 24. By whom is that reamer made?

A. The Union Tool Company of Los Angeles.

Q. 25. The defendant in this case?

(Deposition of Charles E. Wilcox.)

A. I believe so, yes, sir.

Q. 26. You have mentioned the Union Oil Company in a previous answer; do you know whether there is, or has been, any relation between that company and the Union Tool Company just mentioned by you?

Mr. LYON.—Objected to as incompetent, not the best of evidence, hearsay, not in the testimony, and as leading.

Q. 27. Now, the question is, do you know of your own knowledge? A. No, sir, I don't.

Q. 28. Do you know whether the Union Oil Company ever used any Double reamers? A. Yes, sir.

Q. 29. And when?

A. Well, they used them all over the State wherever they were drilling, exclusively, up to a couple of years ago. At least I do not know of their ever using any other kind.

Q. 30. Until what time? [331]

A. A couple of years ago.

Q. 31. And then what did they use?

A. Well, they commenced using the Wilson reamers.

Q. 32. And have you ever observed any such use by that company?

Mr. LYON.—Objected to as leading.

A. Yes, sir, I have seen them using the Double reamers.

Q. 33. Now, my question was relative to the Wilson reamers. A. By the Union Oil Company?

Mr. LYON.—Same objection.

(Deposition of Charles E. Wilcox.)

Q. 34. The Union Oil Company. A. Yes, sir.

Q. 35. When and where?

A. Well, I have seen them used out in the Brea Canyon Field.

Q. 36. Where is that?

A. Orange County, California.

Q. 37. Any place else?

A. Yes, sir, I have seen them used in the Fullerton fields.

Q. 38. Where?

A. Orange County, California.

Q. 39. Do you know why the Union Oil Company used the Wilson underreamer after using the Double underreamer?

Mr. LYON.—Objected to as leading, incompetent, no foundation being laid, and calling for a conclusion of the witness and as not being a statement of facts.

A. Well, they thought it was a safer reamer in regard [332] to breakage and that the Wilson reamer had advantages over other types in regard to remachining.

Q. 40. How do you know that they thought so; upon what facts do you base that answer?

Mr. LYON.—Same objections as in the previous question; not bearing any relation, etc.

A. They have very hard formation to drill through in that particular country out there, particularly in the Brea Canyon fields, and they have been trying to get down some of their old wells. They are trying to reach what is known as 'burch sand,' and they had more or less trouble with the breaking of cutters

(Deposition of Charles E. Wilcox.)

with the Double reamer. I induced them to try the Wilson reamer; they tried them and have continued to use them since.

Q. 41. Do you know any of the officers of the Union Oil Company?

A. I know Mr. Hill; I believe he is the field superintendent. Also, am slightly acquainted with Mr. Brown, purchasing agent, I believe, and Mr. Pickering, superintendent of the Fullerton field.

Q. 42. Have you at any time *have* any talk with Mr. Pickering about the Wilson reamer?

Mr. LYON.—Objected to as incompetent, hearsay, and not the best *evident*.

Mr. BLAKESLEE.—We are manifestly attempting to show evidence pertinent to the use of underreamers, further pertinent to the quality of the work done thereby and further pertinent to the reamers of the complaint and the defendant.

A. Yes, sir, I have talked with Mr. Pickering regarding the Wilson reamers. [333]

Q. 43. Was this in connection with your service as salesman for the Wilson & Willard Manufacturing Company?

Mr. LYON.—Objected to as leading, incompetent and as calling for a conclusion of the witness; not a statement of facts.

A. Yes, sir.

Q. 44. Can you state any such conversation as you had with Mr. Pickering in this connection?

Mr. LYON.—Objected to as leading, and any such conversation would be objected to as incompetent,

(Deposition of Charles E. Wilcox.)

hearsay, not the best evidence, and it not being shown that the defendant or any of its officers were present during such conversation, or in any manner bound thereby, and should be testified to by the parties expressing the opinions and not by hearsay evidence of what such opinion was.

A. Mr. Pickering said he was very well satisfied with the Wilson reamer. One time in particular he sent a Wilson in to be remachined and asked me when it would be back, and requested me to hurry it up as far as possible, that he did not have another Wilson there, and in a general way gave me to understand that he was very well pleased with the reamer.

Q. 45. When did this occur?

A. A year ago, probably; possibly not so long.

Q. 46. Can you state the name of any other concern using the Wilson underreamer at the present time, since using the Double underreamer?

A. The Coalin*de* Land Company, I believe, is using the Wilson reamer.

Mr. LYON.—We move to strike the answer from the record on the ground that it is a mere guess, a conclusion and expression of an opinion of the witness; hearsay, incompetent and not the best [334] evidence.

A. I will state that the Coalin*de* Land Company is using the Wilson reamer at the present time.

At this point counsel for defendant interrupted the proceedings with the statement that the Honorable B. F. Bledsoe, one of the Judges of this court, has announced that he will be in his chambers at

twelve (12) o'clock and prepared to hear the application for a restraining order in this case as notified, and counsel for defendant now requests an adjournment for the purpose of such hearing, it now being the hour of 11:50 A. M.

Mr. BLAKESLEE.—Of course, we do not wish to interfere with the hearing of this motion, and accept counsel's statement that the Court is prepared to hear it, and will repair with him to the chambers of the Honorable Judge.

Whereupon the further taking of testimony herein was adjourned until two fifteen o'clock P. M., at the same place.

On Friday, December 11th, 1915, at 2:15 o'clock P. M., the further taking of testimony herein was resumed, pursuant to the adjournment.

Whereupon the following proceedings were had:

Mr. LYON.—I decline to further attend the taking of the deposition of this witness on the grounds stated in the objections to the deposition of this witness heretofore given, and to the swearing of the witness; and among such objections are the objections that the defendant has a right to complete his cross-examination of the witness E. C. Wilson before the complainant has a right to take the testimony or deposition of any other witness in this case, and the cross-examination of such witness E. C. Wilson has been rendered impossible, due to the attitude of the complainant and [335] complainant's counsel in refusing to permit such cross-examination to take

place before and to be certified, and returned by the notary, I. Benjamin.

The further objection is noted to the testimony of this, or any other witness in this case who may hereafter be questioned that no notice of the taking of the deposition has been given. It is to be noted on the record that at this point counsel for defendant departs from the room and the proceedings, and stands upon the motion now made to strike the deposition of this witness so far heretofore given, from the record and to exclude it from consideration upon each of the grounds stated in the objections therein and noted on the record, and notice is given that a similar motion will be made with respect to any other deposition in this case taken under the present notice, or before the cross-examination of the witness E. C. Wilson is concluded.

Whereupon counsel for defendant departs and is not present at the further deposition of the witness C. E. Wilcox.

Mr. BLAKESLEE.—The record shows that the party Wilson as a witness was produced this morning for cross-examination, and was here all the morning, and that notary, I. Benjamin, was here to be present during his cross-examination. The motion made by counsel for defendant to compel the witness Wilson to testify, was merely that he answer a certain question, and he has been ready here this morning to answer that question in the presence of the said notary, I. Benjamin. Our records show that in accordance with the understanding of the

(Deposition of Charles E. Wilcox.)

counsel for complainant, the Honorable B. F. Bledsoe, in chambers, did this day refuse to entertain the motion and make any order thereon, *i. e.*, the motion brought by counsel for defendant before the said Honorable Judge, and that therefore, there being no reason shown for discontinuing the proceedings, they will be so continued. Counsel for defendant was here this [336] morning during the examination of the present witness, and acted upon such direct examination, and if he wishes to absent himself during the further examination of this witness, it is his privilege.

Direct Examination (Continued).

(By Mr. BLAKESLEE.)

Q. 47. Can you state the name of any other concern using the Wilson underreamer since using the Double reamer?

A. All those names in my previous answer were people that have used the Wilson Reamer after having used the Double Reamer.

Q. 48. Do you mean to include the long list in your answer stating the number of firms using the Wilson Reamer, including the Union Oil Company?

A. Yes, sir.

Q. 49. In how many instances have you seen such Wilson Reamer, if any, in use by these concerns?

A. Practically all of them.

Q. 50. In selling Wilson underreamers to these, and other concerns, please state what selling points or arguments you offered to such prospective purchasers.

(Deposition of Charles E. Wilcox.)

A. Well, I pointed out the facts that the structure of the cutters was stronger than in other makes; that the cutter was wider, it was not liable to give a key seated hole, and also that the body of the reamer could be worn out and then sent to the shop and be remachined and make the body as good as new; and that they were not as liable to lose cutters by breakage.

Q. 51. Do you know whether the Union Tool Company have made any changes in the construction of the cutters of the Double underreamers at any time? A. Yes, sir, I believe they have.

Q. 52. What was the general nature of such change? [337]

A. Well, I believe they built some reamers recently that are practically the same as the Wilson reamer, with an open mouth.

Q. 53. I am talking now particularly about the cutters. Do you know of any changes having been made by the Union Tool Company in the cutters of the Double reamers?

A. Not from personal knowledge, no.

Q. 54. Do you see before you on the floor any other reamer than the Wilson underreamers you referred to? A. Yes, sir.

Q. 55. What do you see there?

A. There are four different Double reamers.

Q. 56. Witness points out Wilson Exhibit, Old-style Double Underreamer Body, Wilson Exhibit Improved Underreamer and Cutter, and, also, two other underreamers lying upon the floor.

(Deposition of Charles E. Wilcox.)

Q. 56. I call your attention to one of the cutters of Wilson Exhibit Improved Double Reamers and Cutters and ask you if you have ever seen such a cutter before. A. Yes, sir.

Q. 57. When did you first see such a cutter?

A. About three years ago.

Q. 58. I call your attention to Wilson Exhibit, old-style Double Reamer-cutter #1 and ask if you have ever seen a cutter like that before?

A. Yes, sir.

Q. 59. When did you first see such a cutter?

A. Three or four years ago.

Q. 60. When was it, with reference to the time you first saw the other cutter of Wilson Exhibit Improved Double Underreamer and Cutter?

A. Well, I would say along about the same time.
[338]

Q. 61. Which did you see first?

A. This one here. (Witness points to one of the cutters, Wilson Exhibit Improved Double Reamer and Cutter.)

Q. 62. How long have you been familiar with underreamers? A. Fifteen years.

Q. 63. And how long have you been familiar with the Double underreamers? A. About ten years.

Whereupon, the further taking of testimony herein was adjourned until Thursday, December 17th, 1914, at 10 o'clock A. M., at the same place.

In the United States District Court, Southern Division of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Further proofs taken on behalf of complainant, *in re* Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, in Equity, No. A-4, pursuant to adjournment, at the office of Raymond Ives Blakeslee, counsel for complainant, at rooms 728-729-730 California Building, Los Angeles, California, before Francis L. Isgrigg, Notary Public, such procedure being continued likewise under Stipulation and record, as provided for the taking of proofs.

Present: RAYMOND IVES BLAKESLEE, Esquire, Counsel for Complainant, and
FREDERICK S. LYON, Esquire, Counsel for Defendant. [339]

Further testimony of the witness, Charles E. Wilcox.

Thursday, December 17, 1914.

Mr. CHARLES E. WILCOX, resuming his direct examination, testified as follows:

(By Mr. BLAKESLEE.)

Q. I will now ask you a little further as to the approximate time when you first became acquainted

(Deposition of Charles E. Wilcox.)

with the Double Underreamer, manufactured by the Union Tool Company.

A. In 1905 I believe was the first time I used one, although I had seen them around the supply-house I believe, previous to that.

Q. And when did you first become acquainted with the Wilson Underreamer?

A. I had seen the Wilson Underreamer around the Bakersfield Iron Works, 1905-1906, along there some time.

Q. And when did you first become acquainted with the so-called 'improved Double underreamer'?

A. About 1908, I believe.

Q. Have you ever seen a cutter similar to the one I now call your attention to, before?

(Counsel shows witness cutter.)

A. Yes, sir, I have seen that.

Q. In connection with what device?

A. In connection with the Double Reamer.

Q. What type of Double Reamer?

A. That would be this one here. (Witness points to Complainant's Exhibit, Old-style Double Underreamer Body, and is testifying with reference to Complainant's Exhibit, Old-style Double Underreamer and Cutter.)

Q. I now show you another cutter and ask you if you have ever seen a cutter of that type before?

A. Yes, sir. [340]

Q. In connection with what reamer?

A. In connection with the reamer known, and

(Deposition of Charles E. Wilcox.)
spoken of as the Double Reamer.

Q. And which type of Double Reamer?

A. This one. (Witness refers to complainant's exhibit Improved Double Reamer and Cutter, of which the cutter just handed him, is an exhibit part.)

Q. Of these two cutters last submitted to you, which type did you first see?

A. This one. (Witness refers again to Complainant's Exhibit, Old-style Double Reamer and Cutter #1.)

Mr. BLAKESLEE.—Let it be noted that the further direct examination of the present witness is pursuant to adjournment and also, to notice for taking further proofs, which is now filed with the notary.

Mr. BLAKESLEE.—Counsel may now examine the witness.

Mr. LYON.—No cross-examination.

At which time, an adjournment was taken until Friday, December 18th, 1914, at the hour of ten o'clock A. M., at the same place.

Further proofs taken on behalf of complainant, pursuant to adjournment, at the same place, at the hour of ten-thirty A. M., December 18th, 1914, before Francis L. Isgrigg, Notary Public.

Present: As before.

Deposition of James C. Hubbard, for Complainant.

JAMES C. HUBBARD, being called as a witness for further proofs on behalf of complainant, being duly sworn, testified as follows and answered the questions as put by Mr. Blakeslee.

(Deposition of James C. Hubbard.)

Mr. BLAKESLEE.—Q. 73. Please state your full name, age, residence, and occupation. [341]

A. James C. Hubbard; thirty-four years; residence, *Englewood*, California; occupation, salesman for the Wilson & Willard Manufacturing Company.

Q. 74. How long have you been connected with that company?

A. About since the 5th of October, this year.

Q. 75. Where is that company located?

A. Santa Fe Avenue, Los Angeles, California; corner Santa Fe Avenue and Fifteenth.

Q. 76. What have been your general duties since your connection with this concern?

A. Selling oil well tools and supplies in the various oil fields in the vicinity of Los Angeles, California.

Q. 77. What fields, in particular?

A. Coalinga, Taft, Santa Maria, and Ventura County, California.

Q. 78. What kind of oil well supplies have you sold in those fields?

A. Underreamers and elevators.

Q. 79. Were these underreamers and elevators known by any particular name in the trade?

A. Wilson underreamers and Wilson Elevators.

Q. 80. And by whom made?

A. By the Wilson & Willard *Manufacturing of* Los Angeles, California.

Q. 81. Can you mention the names of any concerns of interests, or persons to whom you have sold any such Wilson reamers?

A. I can't mention any to whom I have sold any.

(Deposition of James C. Hubbard.)

I have solicited their trade and the orders have come in; not that I have sold them personally, but I know of parties who use them.

Q. 82. Can you give the name of any concerns that have [342] placed such orders through your efforts in those fields, for Wilson reamers?

A. Well, there is—I don't know that they placed their orders through my efforts, but the K. T. & O. and the Standard of Coalinga have placed orders for Wilson reamers.

Q. 83. How recently?

A. Within the last three months, or four months, I should say.

Q. 84. Do you know whether these *interest* had previously used any other type of underreamer?

A. They have used the Double underreamer.

Q. 85. For how long a period of time, if you know? A. I couldn't say as to that.

Q. 86. In the fields you have mentioned, approximately, how many concerns, or interests, are actually drilling oil wells at the present time, if you know?

A. Between the Coalinga and Ventura County fields inclusive, there are about twelve or thirteen companies actually engaged.

Q. 87. Have you, or have you not, visited the properties, or certain property, of each of these companies? A. I have.

Q. 88. Within the last three months?

A. Within the last three months; yes, sir.

Q. 89. And how many of such interests were us-

(Deposition of James C. Hubbard.)

ing the Wilson Underreamers in the development of oil wells?

A. Well, out of the twelve or thirteen companies, there were eight or nine of them actively engaged in using the Wilson reamers.

Q. 90. Can you give the names of such companies?

A. The Standard at Coalinga, the K. T. & O. and the Fillmore Oil Syndicate at Fillmore; Brookline at Santa Maria, [343] Ramona Home at Piru, and the Beatty Oil & Development Company at Piru, California.

Q. 91. Has the Western Union Oil Company any properties in those fields? A. In Santa Maria.

Q. 92. What reamers are they using?

A. Double reamers, at present.

Q. 93. State a little more specifically as to the Standard Oil Company's practice. What reamers are they using?

A. To my knowledge the Standard use the Wilson reamer exclusively in Coalinga, California.

Q. 94. Had they previously used any other underreamer? A. I think they had.

Q. 95. What reamer was that?

A. I do not know, that was before my time.

Q. 96. Do you know how many Wilson reamers they have at the present time?

A. No, I could not say as to the number they now have.

Q. 97. Can you mention any specific instances, within your own knowledge of the recent purchase

(Deposition of James C. Hubbard.)

of a Wilson reamer, and the circumstances surrounding such purchase in those fields?

A. For instance, at Ramona Home at Piru, California, they had at least two Double reamers up there which they had broken and with which they had been having a good bit of trouble, losing lugs, so they adapted the Wilson and since that time they have made seventy-five feet of hole where before they could not get ahead at all.

Q. 98. What is the source of your information?

A. Mr. Root, the head driller and Mr. Bolin the manager of the company told me this.

Mr. LYON.—We move to strike the answer from the record and exclude [344] it therefrom, on the ground that it is incompetent, not the best evidence; hearsay.

Mr. BLAKESLEE.—We oppose the motion on the ground that it is what may be called a 'trade report,' showing operations in the field in question.

Q. 99. Did you sell this reamer to this concern?

A. I did not.

Q. 100. Do you know of any other instance in which the Wilson reamer was recently purchased in these fields, where you were acquainted with the circumstances surrounding such purchase?

A. The Brookline at Santa Maria had a very small three-inch hole and had been using the Double Reamer. He knew he was going to have trouble in that hole, so he purchased a three-inch Wilson which done the work properly.

Mr. LYON.—We move to strike the last portion of

(Deposition of James C. Hubbard.)

this answer from the record and exclude it therefrom on the ground that it is incompetent, and ask the witness at this time if he has personal knowledge of the use of such Wilson Reamer, or is he simply reporting from hearsay?

A. Mr. Bell, the superintendent, told me these things.

Q. 101. Have you, during the last three months, been to the properties of the California Limited Company, in the Coalinga field? A. I have,

Q. 102. Do you know whether they are using the Wilson Reamer?

A. They are using the Wilson Underreamers.

Q. 103. Have you any idea of how many they are using?

A. I could not say as to the number they are using.

Q. 104. Do you know whether they had previously used any [345] other reamer?

A. They had used the Double reamer.

Q. 105. Are they using it at the present time?

A. In the larger sizes.

Q. 106. What type Double reamer are they using, if you know? A. I cannot say as to that.

Q. 107. Did they give you any intimation as to what their future policy would be with respect to the purchase of reamers?

Mr. LYON.—Objected to as leading and suggestive, and as incompetent; not the best evidence of any such conversation being shown to have taken place in the presence of the defendant, or anyone

(Deposition of James C. Hubbard.)

connected therewith, and we submit that this witness has no personal knowledge of such policy, or alleged policy.

Mr. BLAKESLEE.—We are simply trying to show trade conditions and the situation with respect to reamers, out of the mouth of this witness who has recently acquainted himself with such conditions.

A. Why, their chief storekeeper, I don't recall his name, told me that they were very well loaded up with Double reamers in the large sizes at the present time, but that in the future, as soon as these larger sizes were used up, he would in all probability, purchase some Wilsons.

Mr. LYON.—We move to strike this from the records upon the grounds stated in the objection.

Q. 108. I call your attention to the device on the floor before you, which I now point out, and ask you if you have ever seen such a device before.

A. I saw a reamer identical with this one in the Tay-Pike store at Coalinga, California. [346]

Q. 109. When was that?

A. About the 15th of October, 1914.

Q. 110. Under what circumstances did you see such a reamer there at that time?

A. I was in their store, and saw this reamer there on exhibition.

Q. 111. Do you know whether or not it was for sale? A. I could not say as to that.

Q. 112. Were there any other reamers there?

Mr. LYON.—Objected to as leading, suggestive, incompetent, not in the evidence and as witness not

(Deposition of James C. Hubbard.)

being qualified to answer the question.

A. There were.

Q. 113. What is the general business of the Tay-Pike store at Coalinga, California?

A. Oil well supply business; selling oil well tools.

Q. 114. Was this reamer, like the one I have pointed out on the floor here, with the other reamers, or set apart, or how was it on display in the store?

A. I think, I could not swear—I think that—I know this reamer was standing up against the wall and there were other reamers lying on the floor.

Q. 116. Did it have any mark or identification upon it that you remember?

A. None that I remember.

Q. 116. Do you remember any other feature, with respect to that instance, relating to this reamer; that is, further than your mere observation of it at that time?

A. You mean had I heard anything about it?

Q. 117. Do you remember anything further, as to that instance? A. No, sir. [347]

Mr. BLAKESLEE.—Let it be shown on the record that the witness has, in his last answer, been referring to complainant's exhibit Reamer, type "F." Counsel may cross-examine.